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(Unclassified)

## PHASE II REPORT

# USAF LOGISTICS PROCESS OPTIMIZATION STUDY for the Aircraft Asset Sustainment Process

AFLMA Project LM9731101

Volume III of III

## Future To Be Asset Sustainment Process Model

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31 December 1998

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## **1.0 BACKGROUND**

In March 1998, HQ USAF/ILXI reviewed the AFLMA/Intergraph Reengineering Team's As Is and To Be process models and requested the team develop a To Be model for a more distant future asset sustainment scenario, unconstrained by today's logistics information systems limitations. The team developed the initial 'distant future' To Be process model after reviewing published Air Force documents on vision, future doctrine, and mission forecasts.

## **2.0 METHODOLOGY**

We reviewed sources including:

- Air Force 2025
- Joint Vision 2010
- Supply 2000
- Quadrennial Defense Review
- Air Force Long Range Plan
- Air Force Logistics Strategic Plan
- DOD Logistic Strategic Plan
- Global Engagement: A Vision for the 21st Century Air Force
- Global Combat Support System Concept of Operations
- 1998 Scientific Advisory Board report on Air Expeditionary Force (AEF) concepts

Using these publications, the AFLMA/Intergraph Reengineering Team merged the presented concepts with current technology and functional momentum. The result was the team's outlined perception of an IDEF-3 future (roughly 10-20 years out) logistics process model.

This future model is based on the team's understanding of the strategic vision and reflects processes meant to:

- Increase efficiency and speed of Air Force logistic systems
- Eliminate redundant, overlapping processes between stove-piped organizations
- Increase the reliability of the logistic systems (including data accuracy)
- Provide an overarching model for the development of all future Air Force logistics

This future process model incorporates current technologies as well as future, emerging technologies. The team did not limit the process model to steps required by current legacy systems, processes, or functional stovepipes.

The model incorporates the principles of Shared Data Environment (SHADE), improved Reliability Centered Maintenance (RCM), increased automation and world-wide web utilization, Forward Support Locations (FSLs), centralized weapon systems management, Expeditionary Aerospace Forces (eAF), and Agile Combat Support concepts.

### **3.0 DISCUSSION**

At the request of Lt Gen William Hallin, HQ USAF/IL, the concepts and process impacts built into the future model were briefed to his deputy and the HQ USAF/IL directorates on 21 and 22 May 1998. The IL staff, in general, agreed that there is benefit to having a process-centric reengineering approach; however, they could not reach consensus on a unified view regarding the future vision of logistics.

Contentious issues included centralized weapons system management and the concept of using forward support locations (more specifically whether they would be established on a regionalized or ad hoc basis). While the concept, as it was presented in our briefing, advocated one centralized office to resolve logistics support shortfalls, some of the IL staff indicated they disagreed with this concept. In their opinion, Air Force leadership seemed to be leaning toward decentralized control and reliance on automated decision tools such as EXPRESS, Standard Base Supply processes, and the Military Standard Requisitioning and Issue Procedures (MILSTRIP) to determine priorities and outcomes for critical asset support to the war fighter.

Use of Forward Support Locations (FSL) for Agile Combat Support was a relatively new concept with many different interpretations of the implementation methodology. While there appeared to be agreement on the probability of future reliance on FSLs to achieve agile logistics, there was also disagreement. Views appeared to be divided upon whether FSLs should be established based upon peace-time operating locations for specific regions or whether FSLs should be established on an ad hoc basis depending on the theater of operations and type of crisis response.

While the IL staff did agree there is a need to have a vision, methodology, and process that can be used to focus and monitor logistics improvements, they did not necessarily support the use of this project as a vehicle to develop that future vision. The staff agreed that the lack of consensus indicated there is the need for an IL meeting with the "future of logistics" as a topic.

### **4.0 CONCLUSION**

The inability of the IL staff to reach a consensus on the methods needed to achieve the logistics goals and objectives outlined in future doctrine indicates the need for an IL meeting with the future of logistics as a topic. The purpose of this meeting should be

twofold: 1) to foster discussions on the future processes and concepts for logistics and 2) to establish written strategic direction for all future efforts from reengineering to logistics information system modernization. The ideas presented and embedded in this Future To Be Asset Sustainment Process Model can be used to initiate these discussions. As the future relies heavily on Joint operations, coordination with other services is warranted to obtain their vision.

Benefit from using these Future To Be Asset Sustainment Process Model include:

1. Use as an overarching model to be the framework and guide for all future logistics studies and improvement efforts. Using this framework provides IL with a "road map" to determine which areas need further work, and the priority that work should be given. The model would also serve as a guidepost to insure the studies are all working towards the same end goal.
2. Use as a blueprint for developing future logistics information systems. Each process within the model contains "placeholders" where data requirements can be specified in detail and the interrelationship of each data element to data needed by other systems can be examined.

## **5.0 RECOMMENDATIONS**

1. HQ USAF/IL establish and publish a strategic vision that successfully bridges strategy to operations planning that will provide specific insight for implementing the logistics goals and objectives outlined in future doctrine.
2. Once this occurs, use the Future To Be Asset Sustainment Process Model presented in this volume as a starting point to refine the logistics processes of the future.
3. After a new Future Model has been developed, promote its use for refining logistics information systems architecture(s) and shared data requirements.

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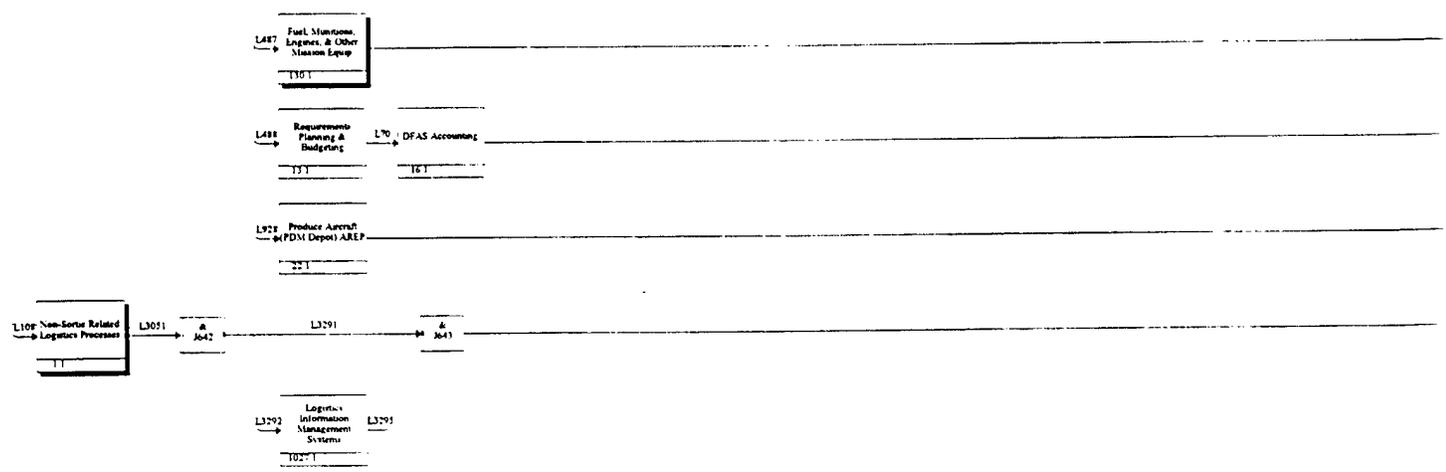
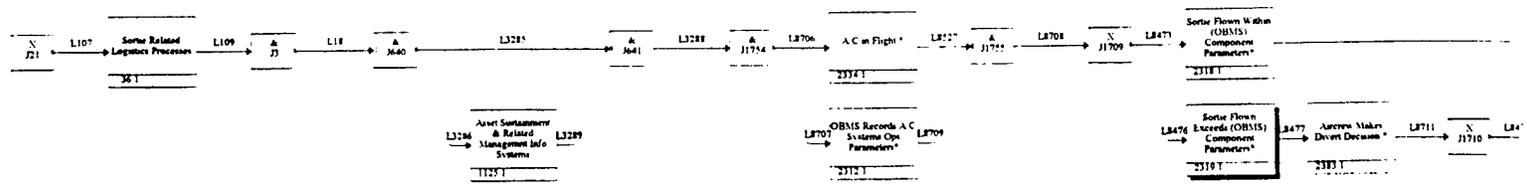
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**Scenario: Future To Be Asset Sustainment Process**

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**Project: Future To Be- Asset Sustainment Process; Date: 10/29/98**

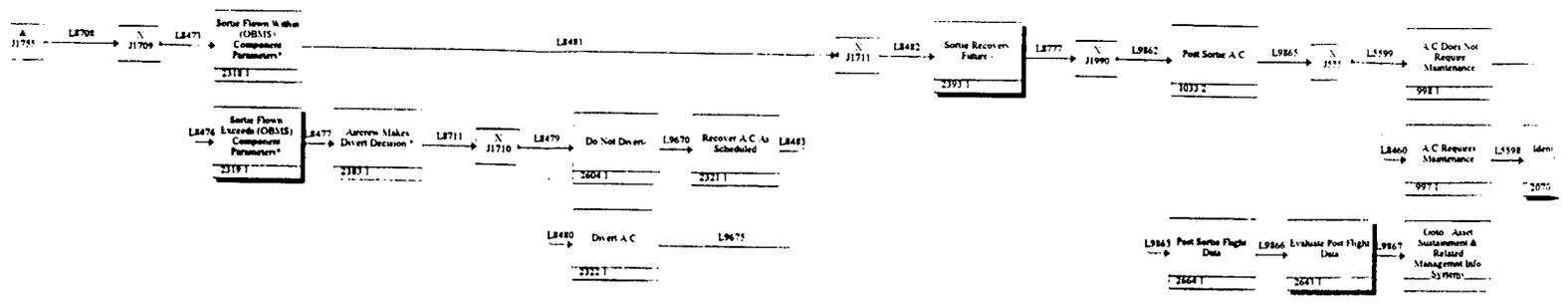
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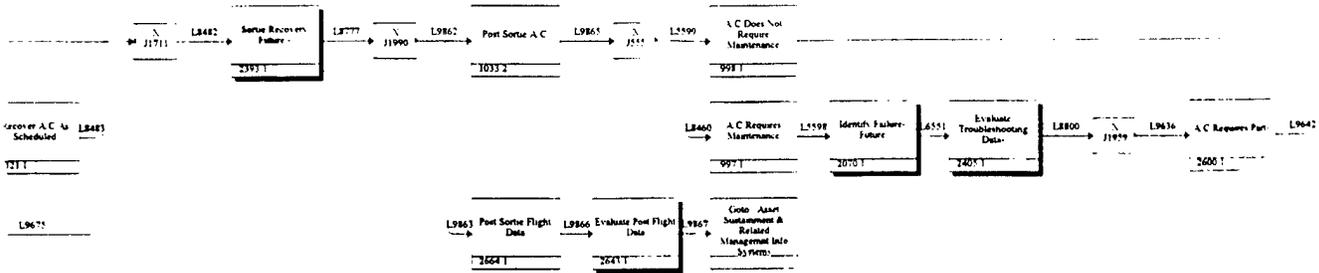


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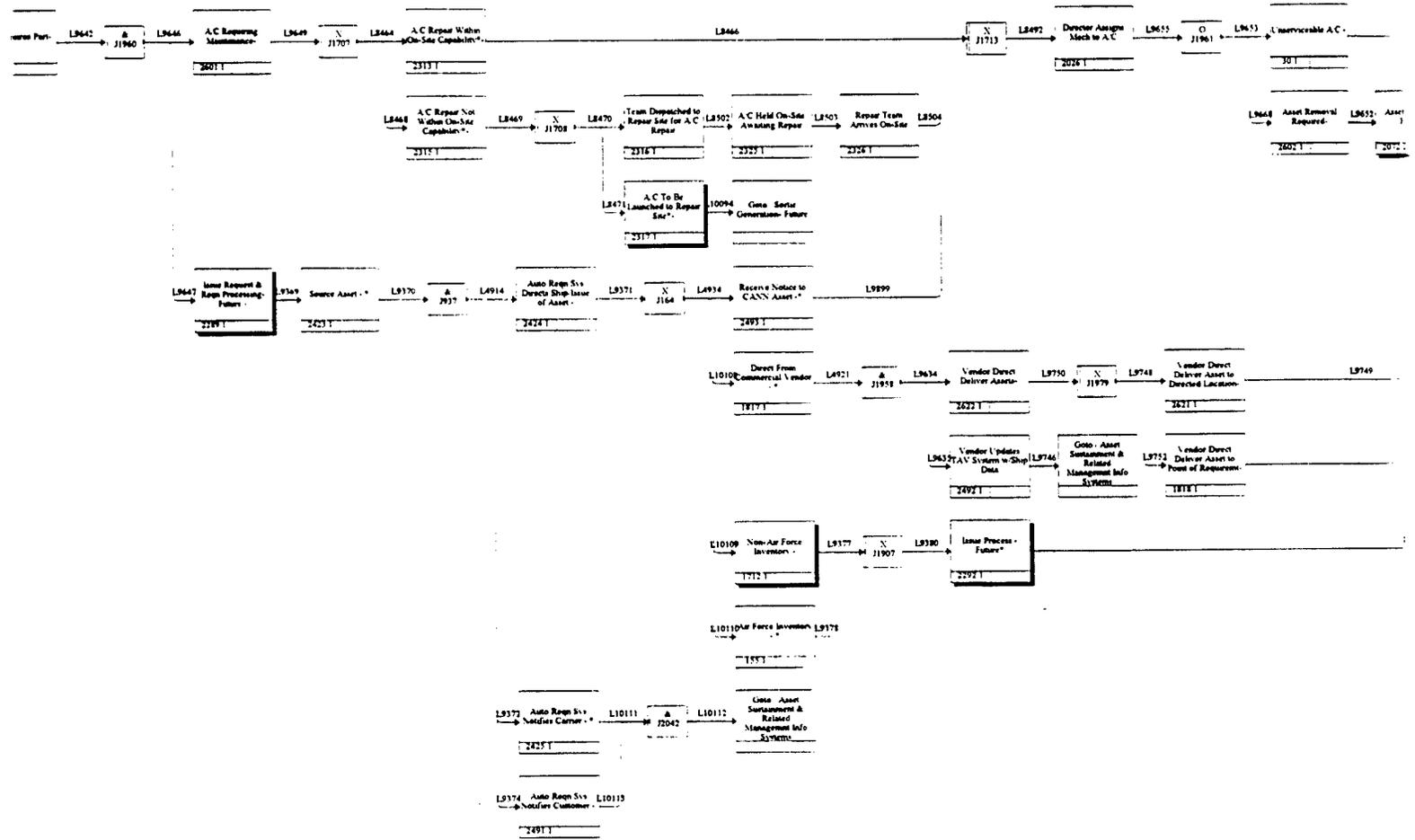
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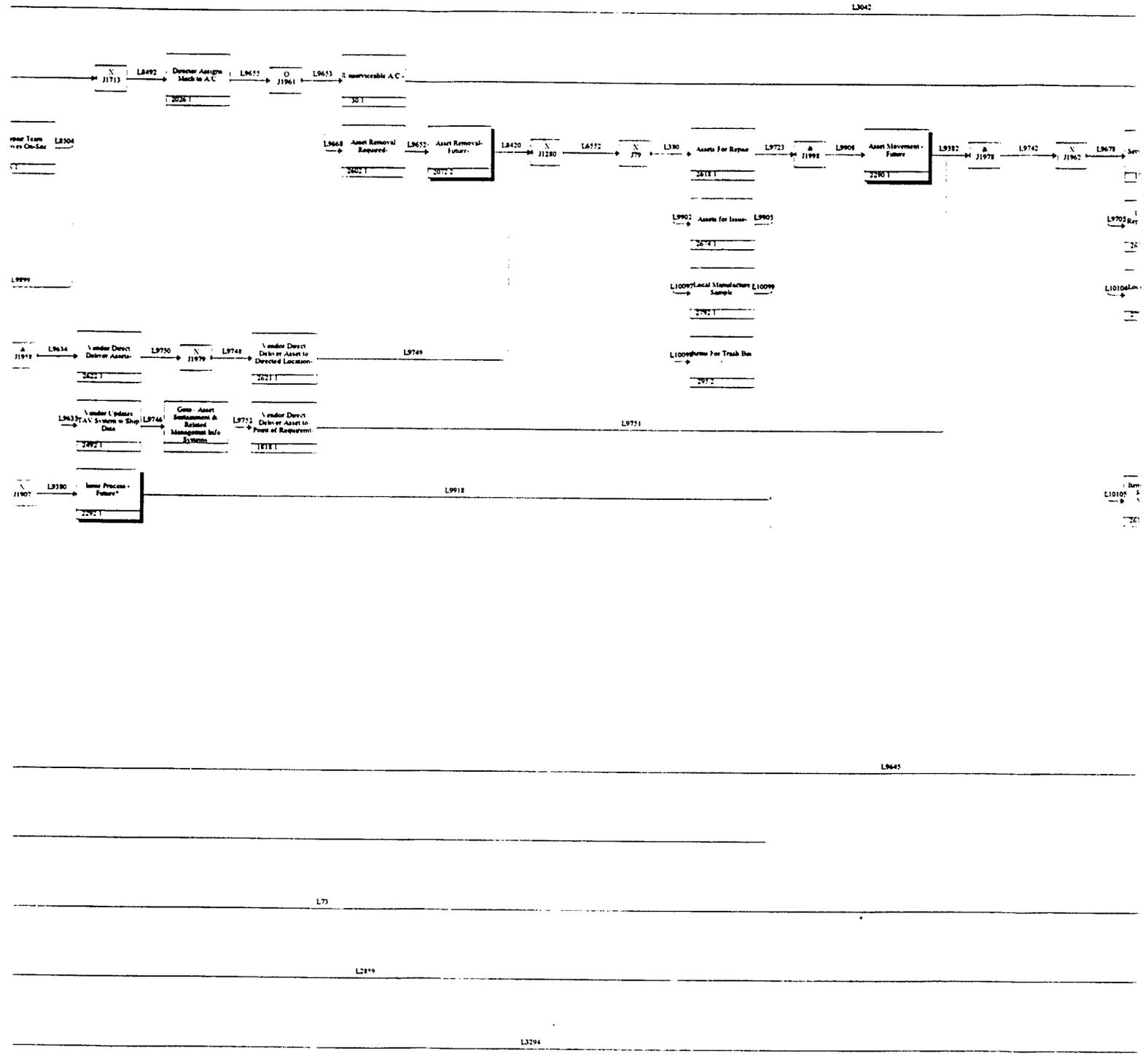
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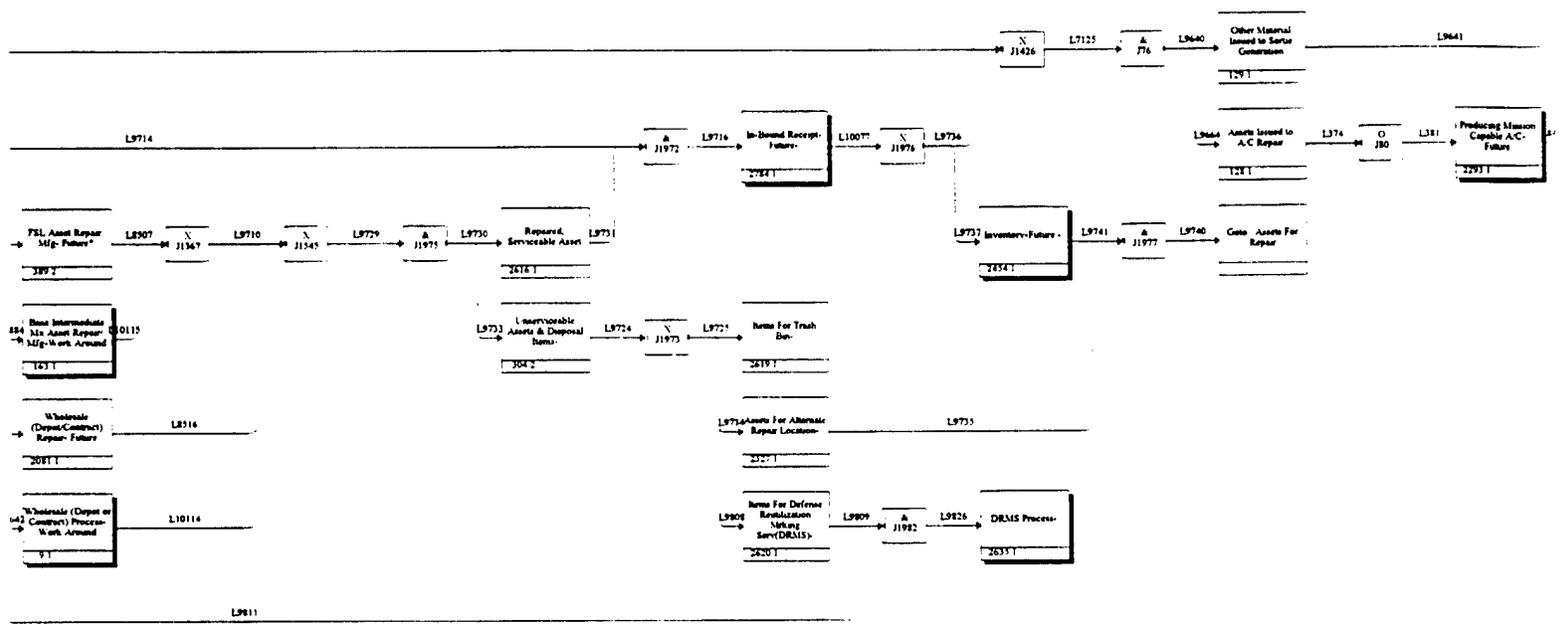


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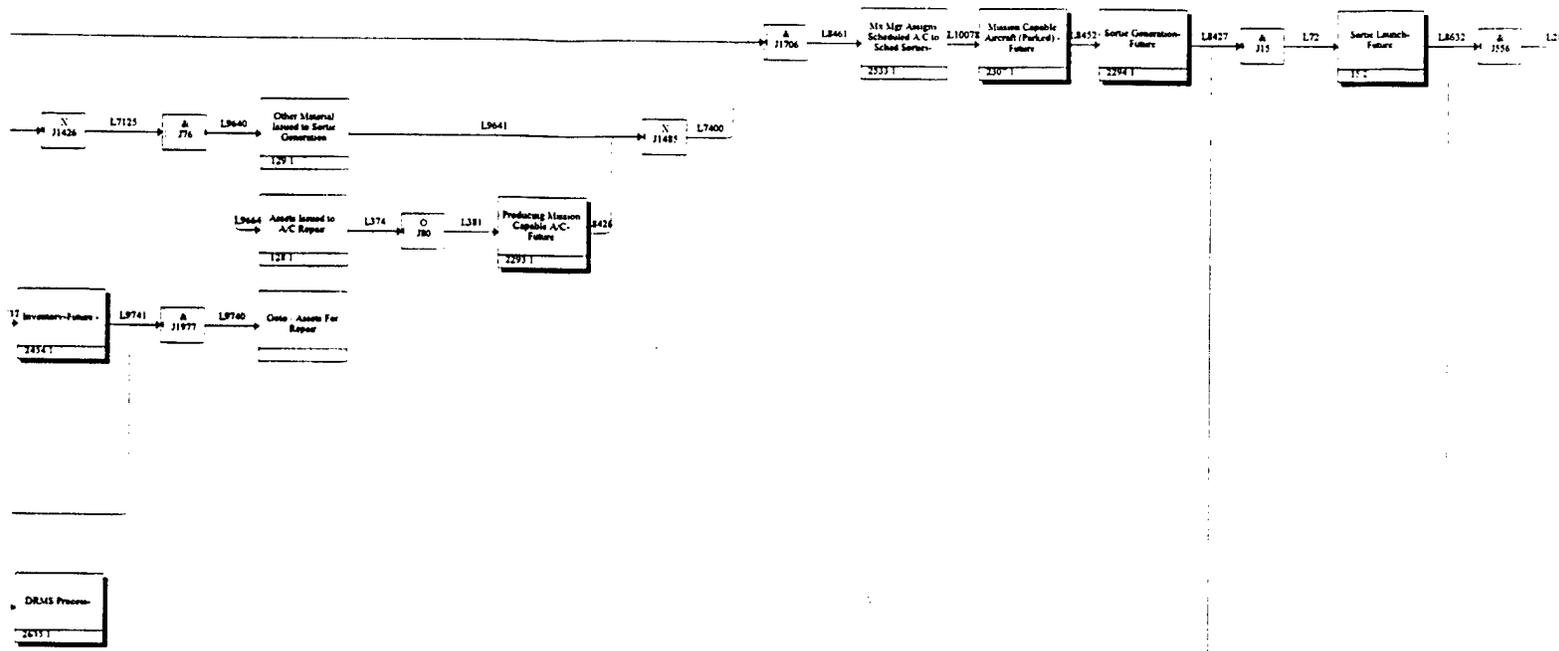








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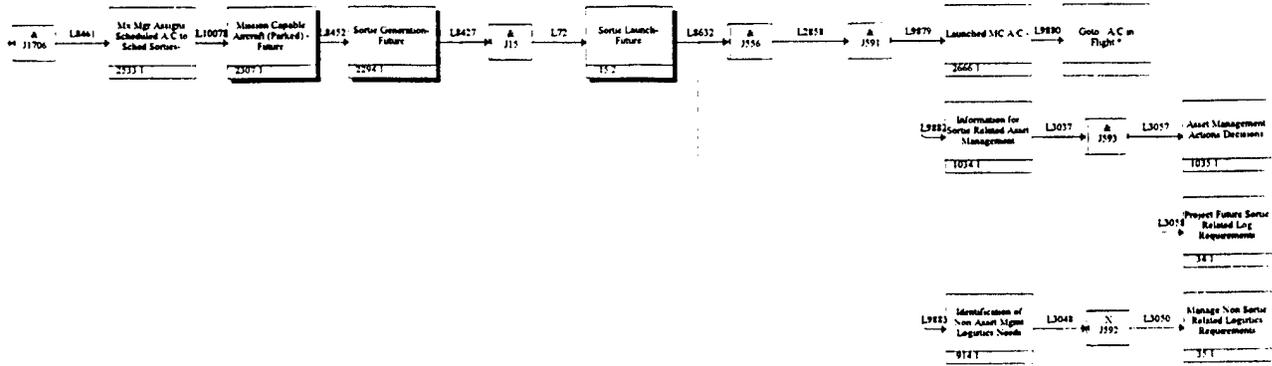


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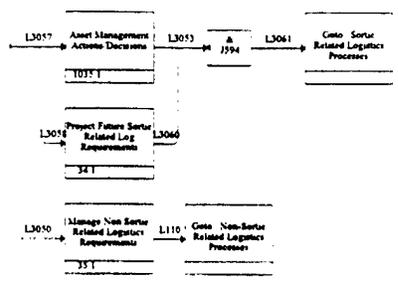


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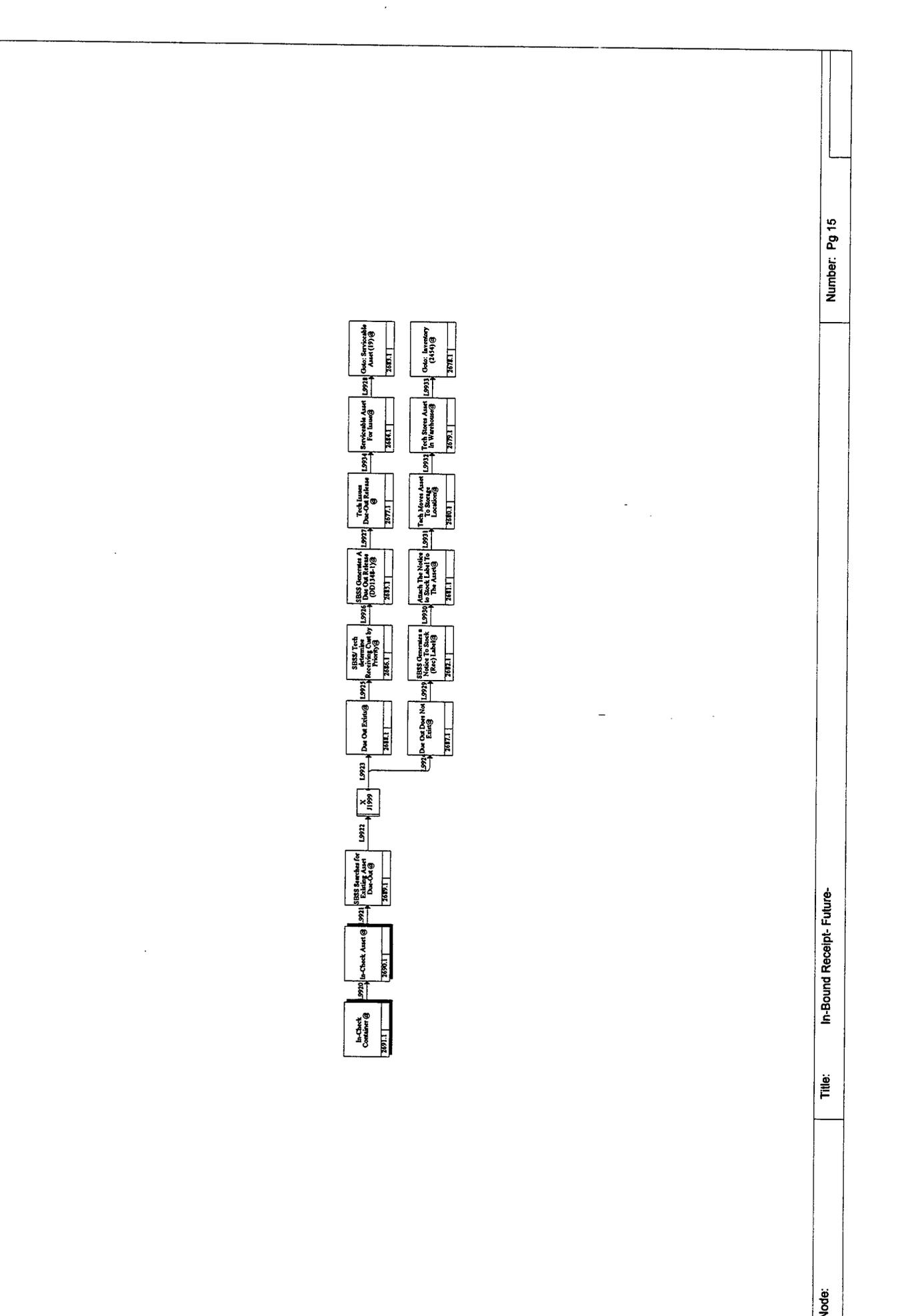
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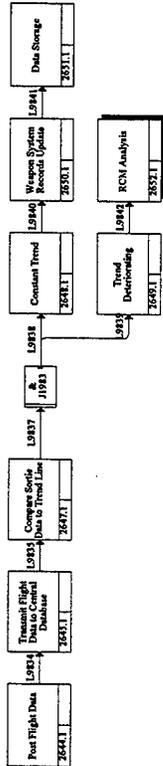
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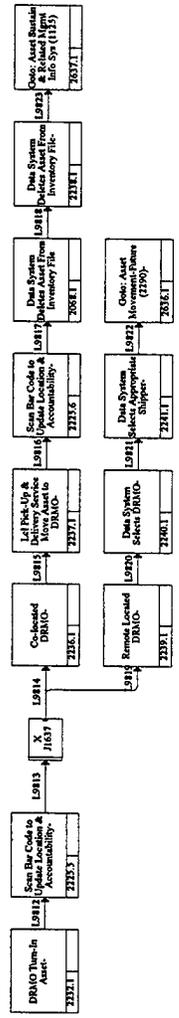
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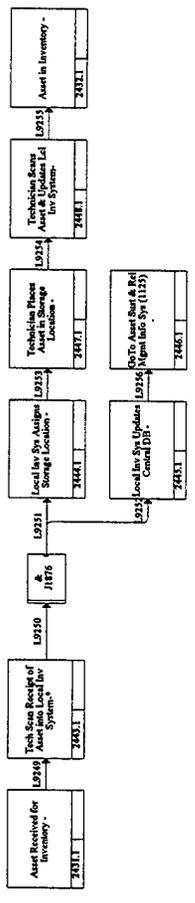
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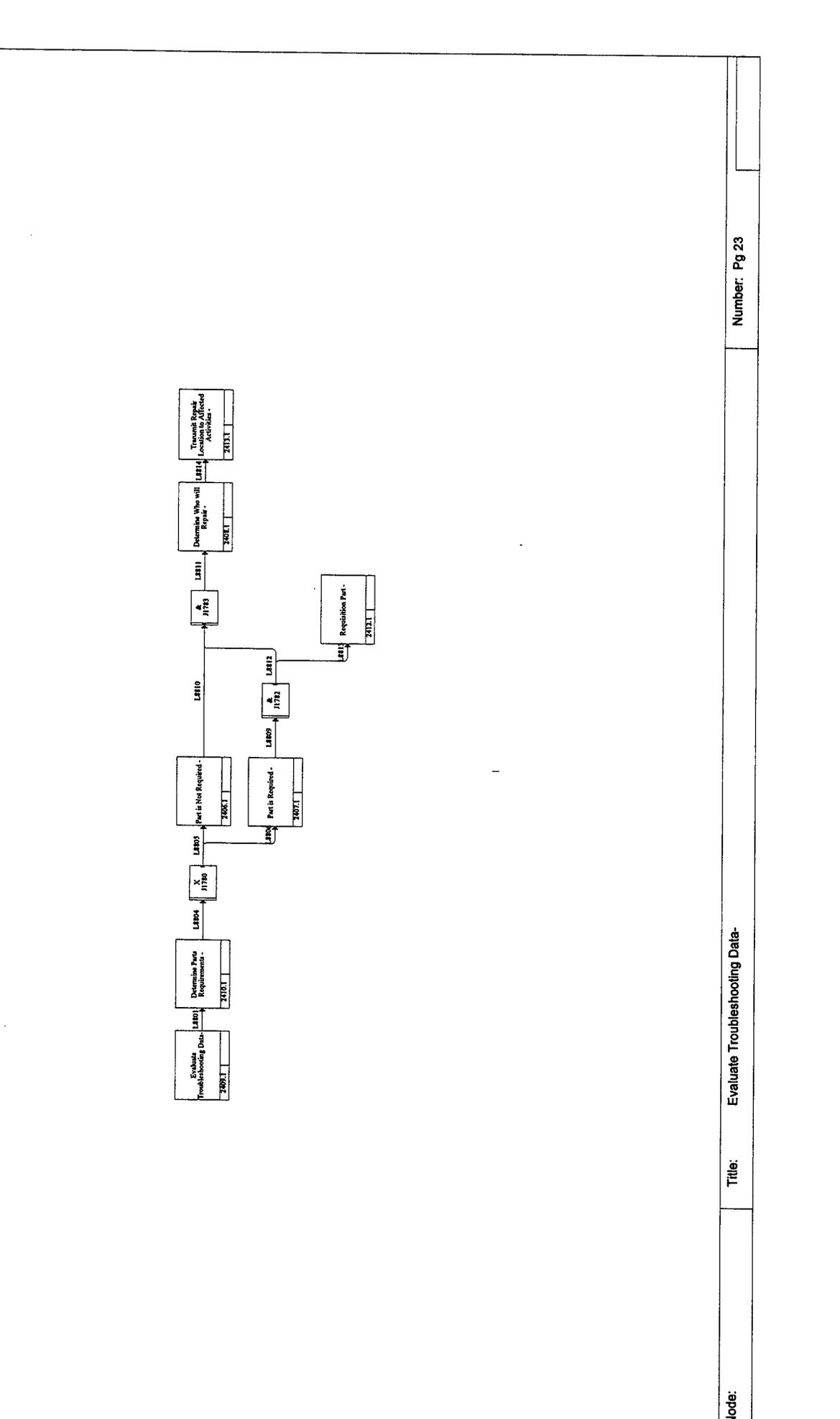
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**Process Flow Decomp: Sortie Flown Exceeds (OBMS) Component Parameters**

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**Process Flow Decomp: A/C To Be Launched to Repair Site\*.-**

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**Process Flow Decomp: Mission Capable Aircraft (Parked) - Future**

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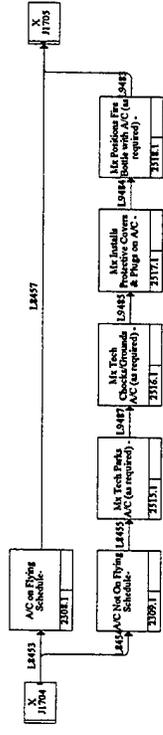
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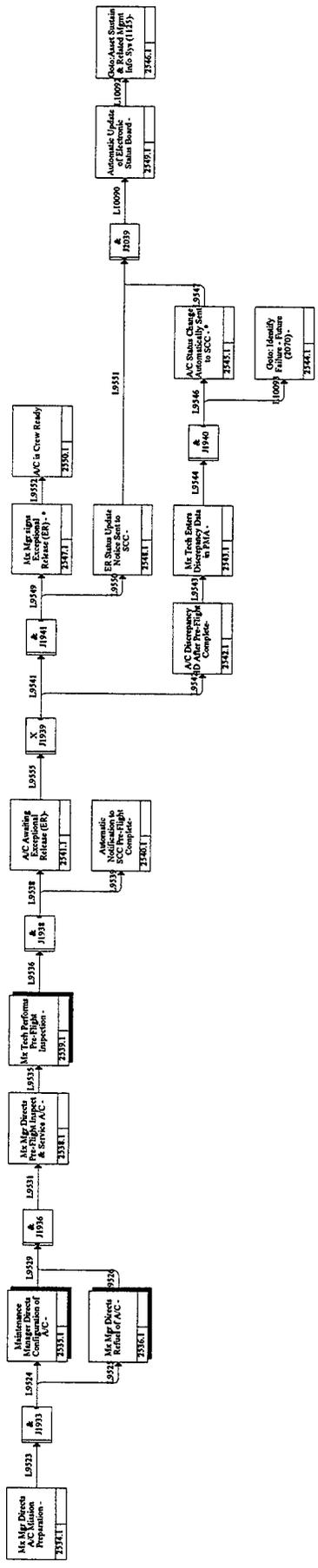


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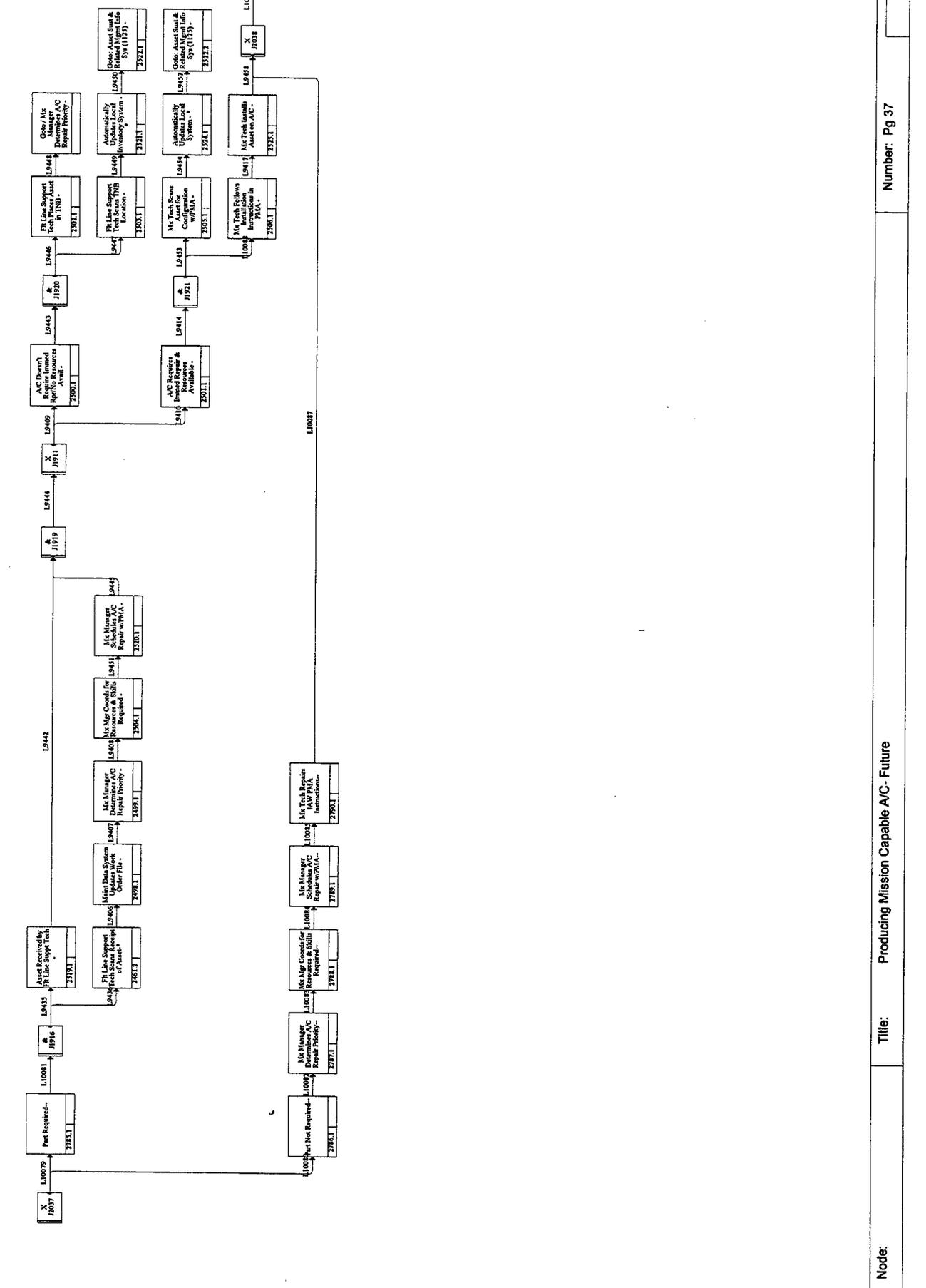
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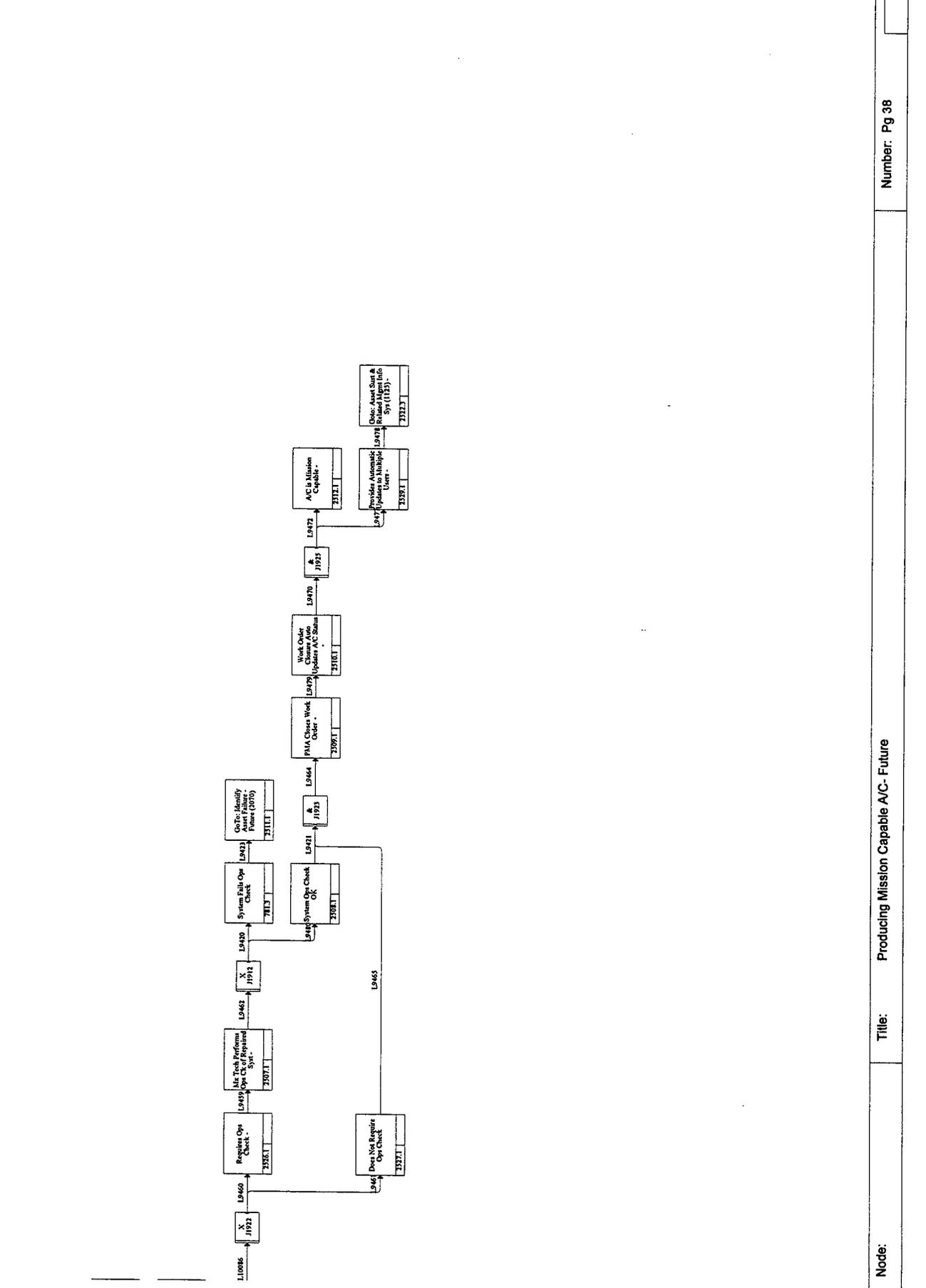


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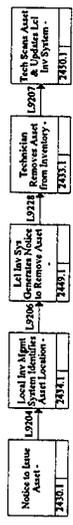
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**Process Flow Decomp: Issue Process - Future\***

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**Process Flow Decomp: Asset Movement - Future**

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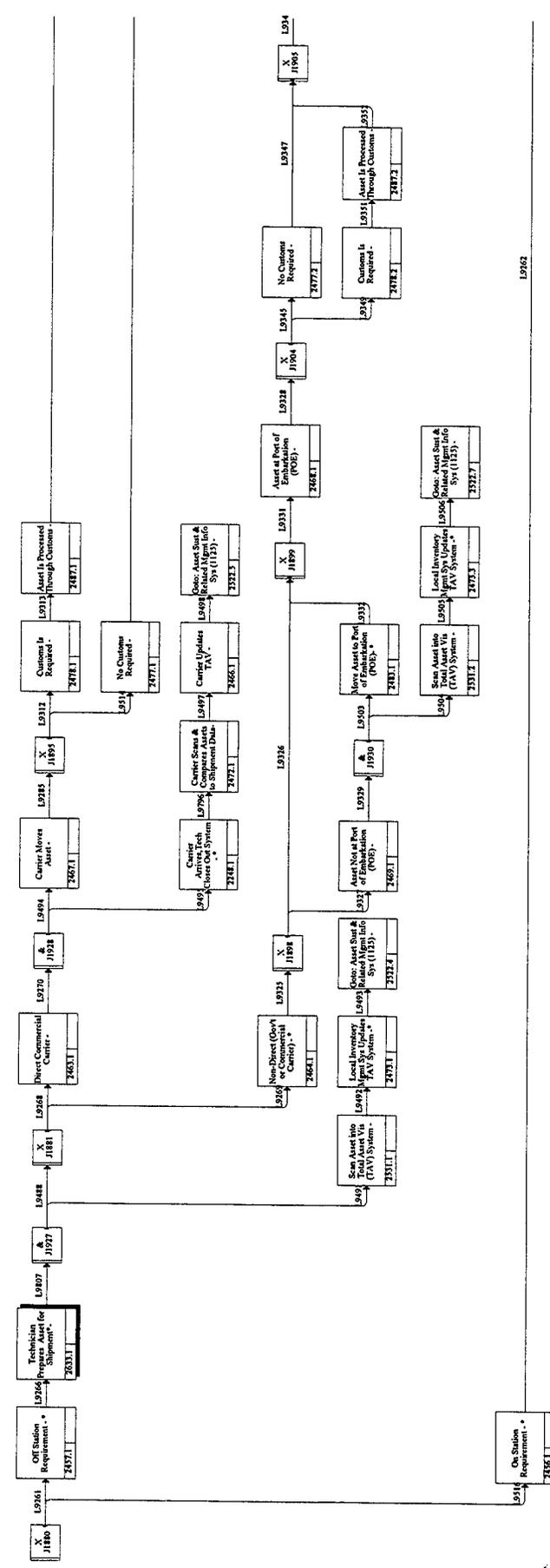
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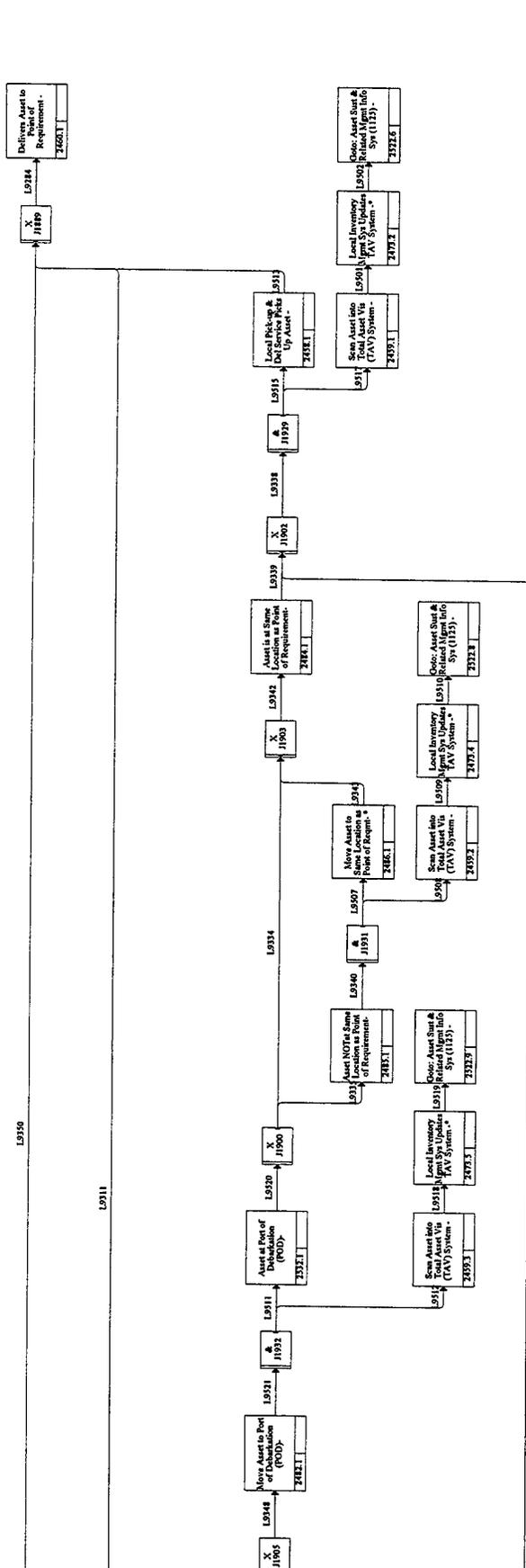
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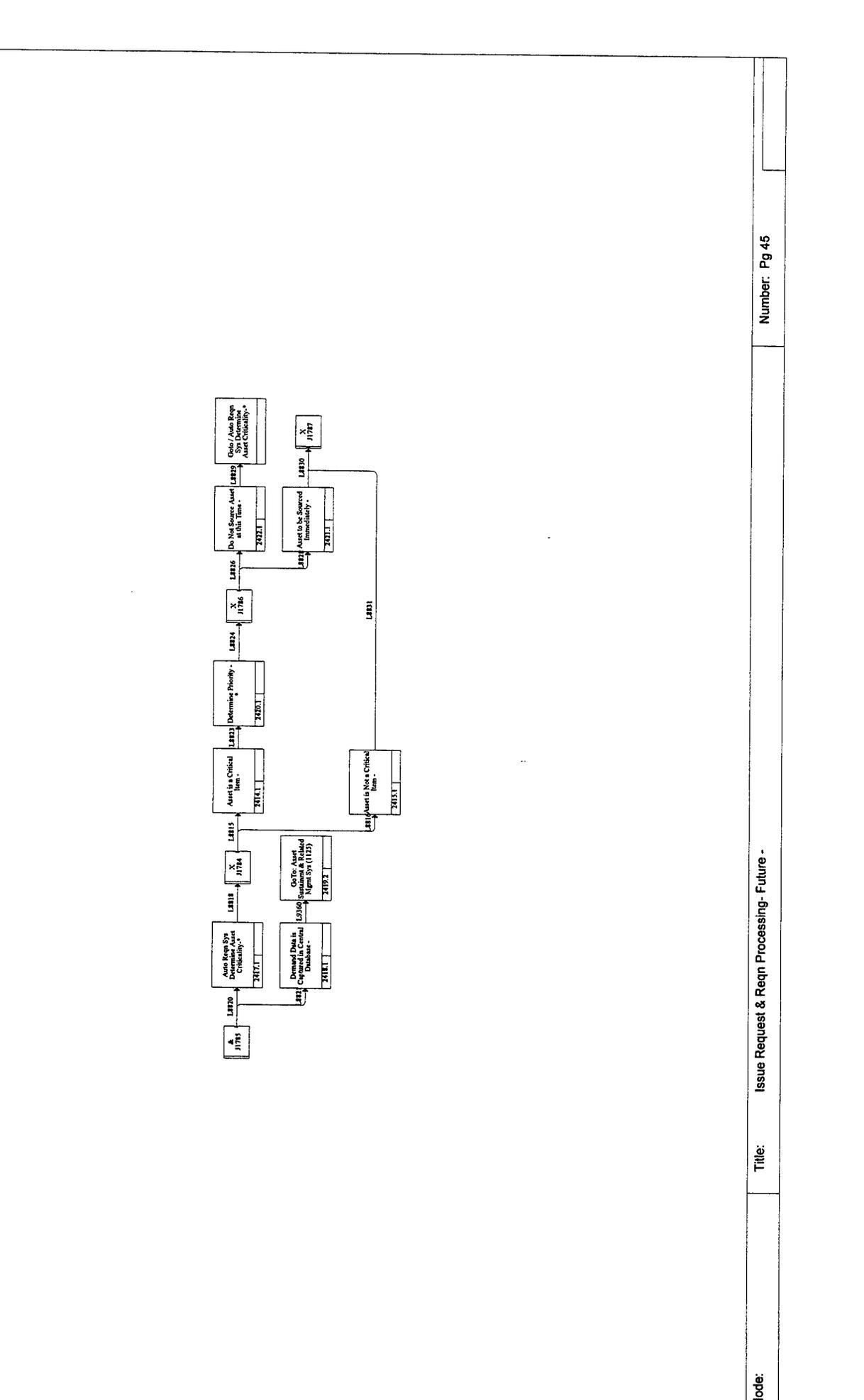


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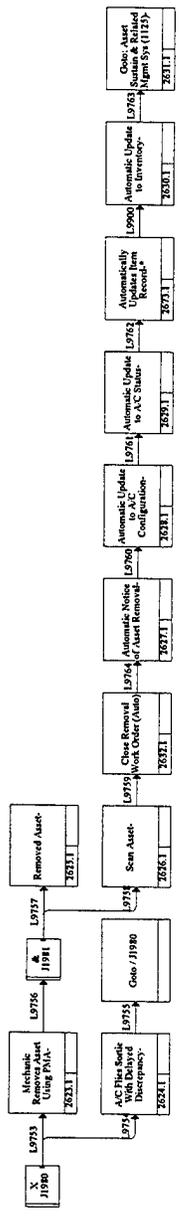
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**Process Flow Decomp: Asset Removal- Future-**

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**Process Flow Decomp: Identify Failure- Future**

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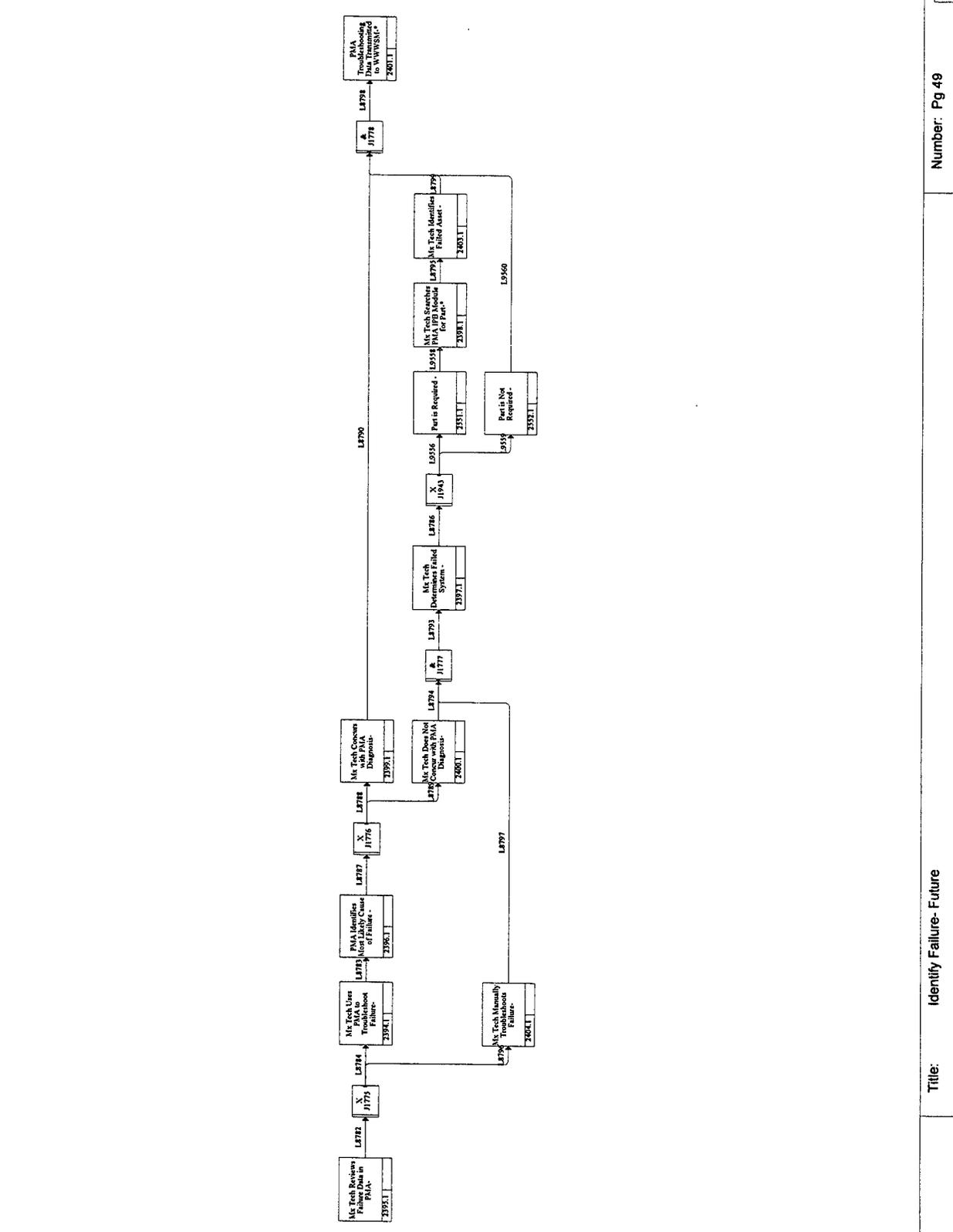
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**Process Flow Decomp: Non-Air Force Inventory**

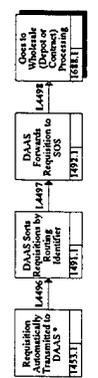
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Author: AFLMA Reengineering Team Date: 10/29/98

Project: Future To Be- Asset Sustainment Pro Rev: 1

Notes: 1 2 3 4 5 6 7 8 9 10 Time: 10:02:15

Working	READER	DATE	Context
X			Neither the US Gov't or Intergraph has any responsibility or liability for any consequences of any use, misuse, inability to use, or reliance upon the information contained herein.



**Process Flow Decomp: Base Intermediate Mx Asset Repair/ Mfg-Work Around**

**t Repair/ Mfg-Work Around**





READER

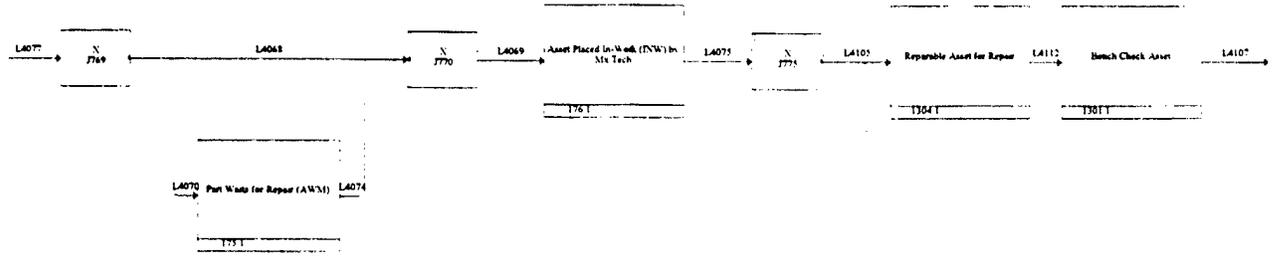
DATE

Context

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Get DFAS Accounting (16.1)

1241



LA108 Local/Manufacture Sample → LA110 Analyze Sample → LA113 Research Tech D

1301 1302 1306



Date: 10/29/98

Working

READER

DATE

nt Process Rev: 1

x Draft

Recommended

Time: 10:06:57

Publication

L809



2

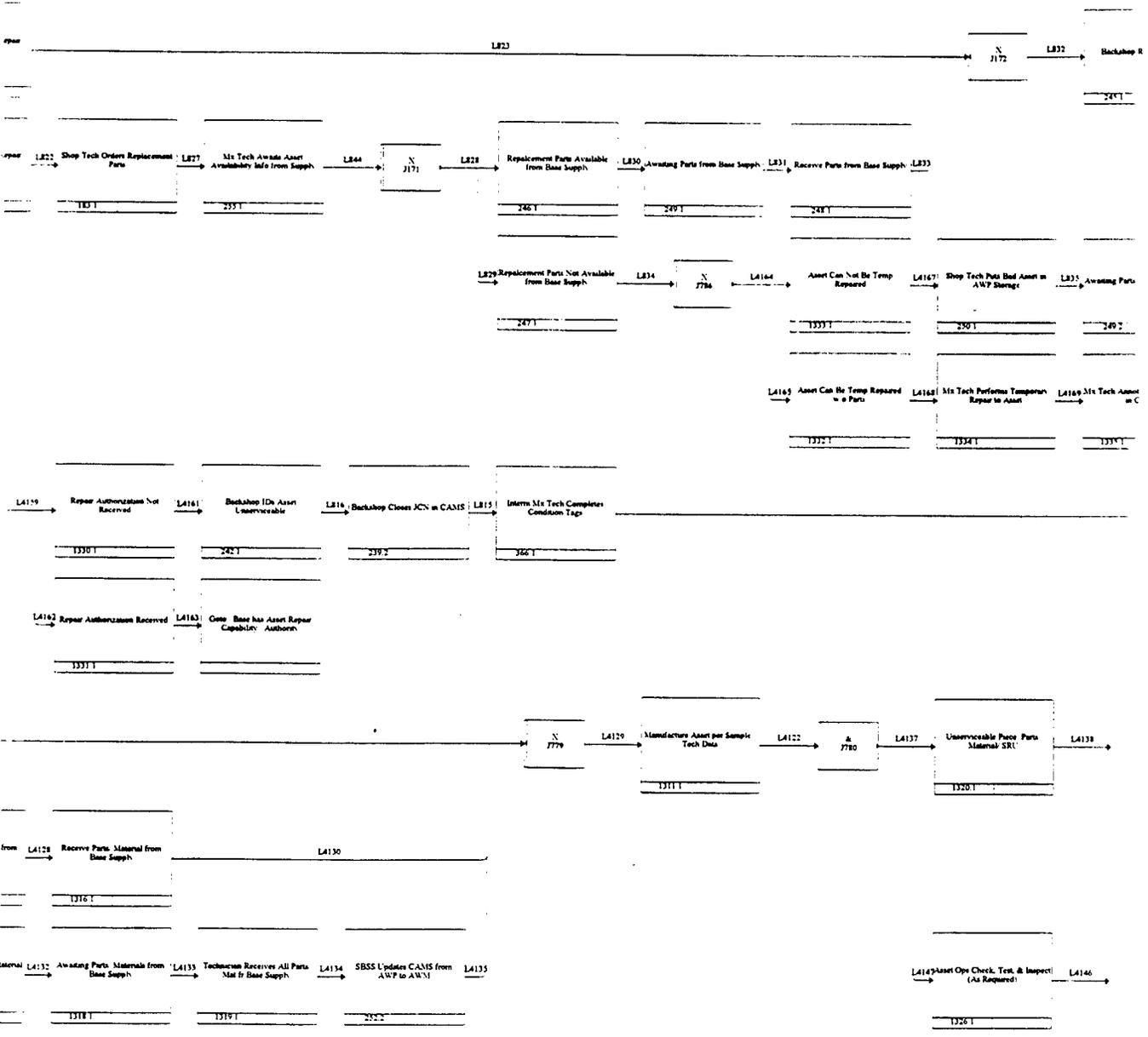
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DATE

Context

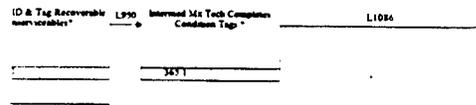
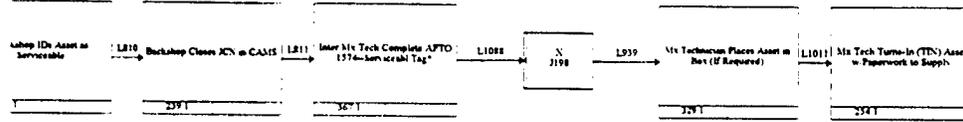
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LB09





Date: 10/29/98	Working	READER	DATE
ment Process Rev: 1	x Draft		
	Recommended		
Time: 10:06:57	Publication		



also Shop Disposes of Locals

L4142

2

READER

DATE

Context

ded

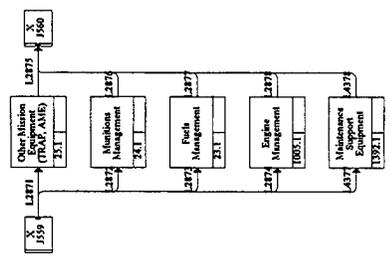
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Can Place Asset in (If Required) (L1011) Ma Tech Turn-in (TEN) Asset Paperwork to Supply

2547

**Process Flow Decomp: Fuel, Munitions, Engines, & Other Mission Equip**

Used AI: Not Approved for Public Release	Author: AFLMA Reengineering Team	Date: 10/29/98	Working	READER	Context
	Project: Future To Be- Asset Sustainment Pro	Rev: 1	<input checked="" type="checkbox"/> Draft		Neither the US Gov't or Intergraph has any responsibility or liability for any consequences of any use, misuse, inability to use, or reliance upon the information contained herein.
	Notes: 1 2 3 4 5 6 7 8 9 10	Time: 09:59:21	<input type="checkbox"/> Recommended		
			<input type="checkbox"/> Publication		



**Process Flow Decomp: Sortie Launch- Future**



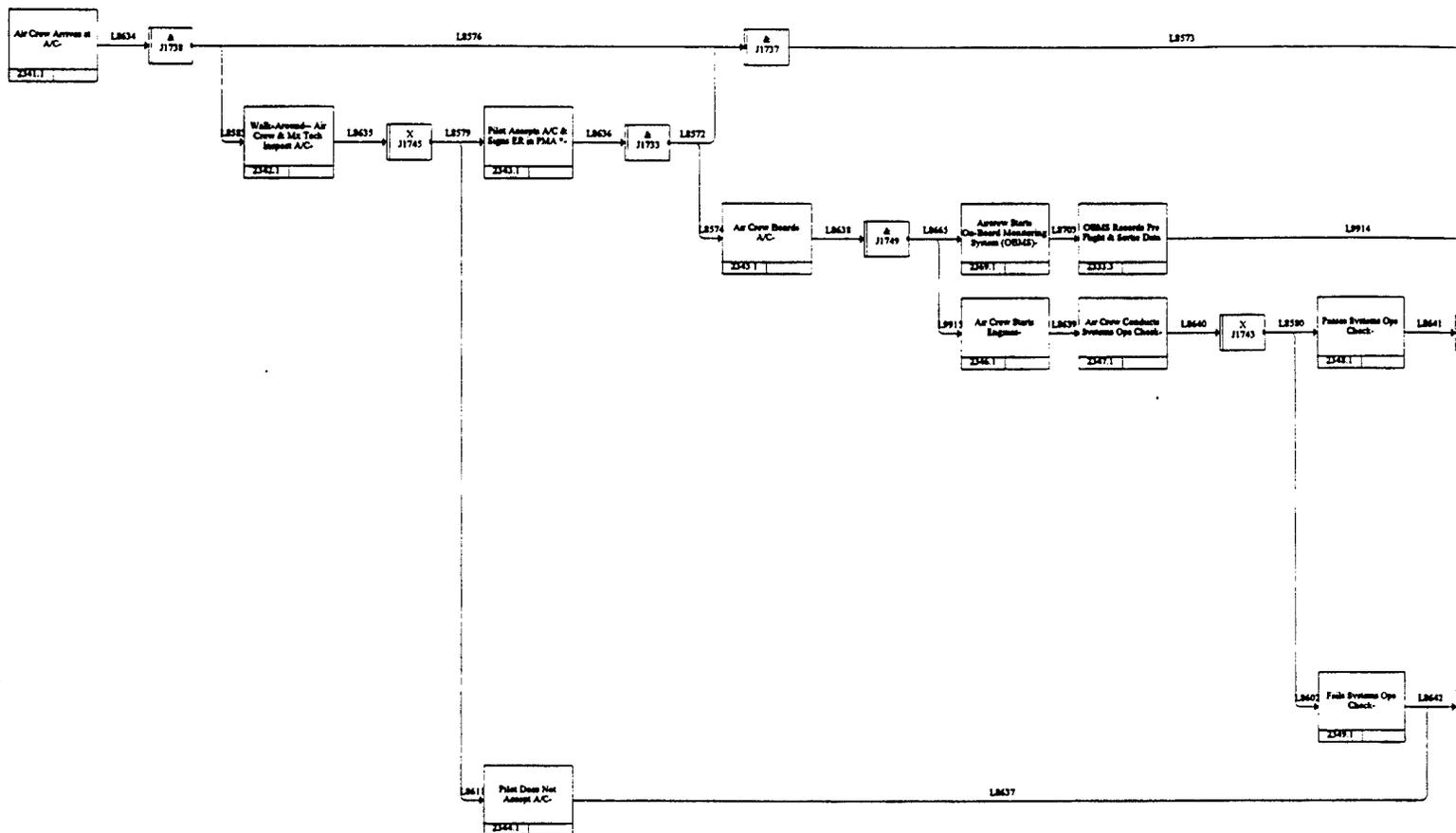
inch- Future

1 At:  
ot Approved for Public Release

Author: AFLMA Reengineering Team  
Project: Future To Be- Asset Sustainment Process  
Notes: 1 2 3 4 5 6 7 8 9 10

Date: 10/29/98  
Rev: 1  
Time: 10:18:32

	Work
x	Draft
	Recc
	Publi



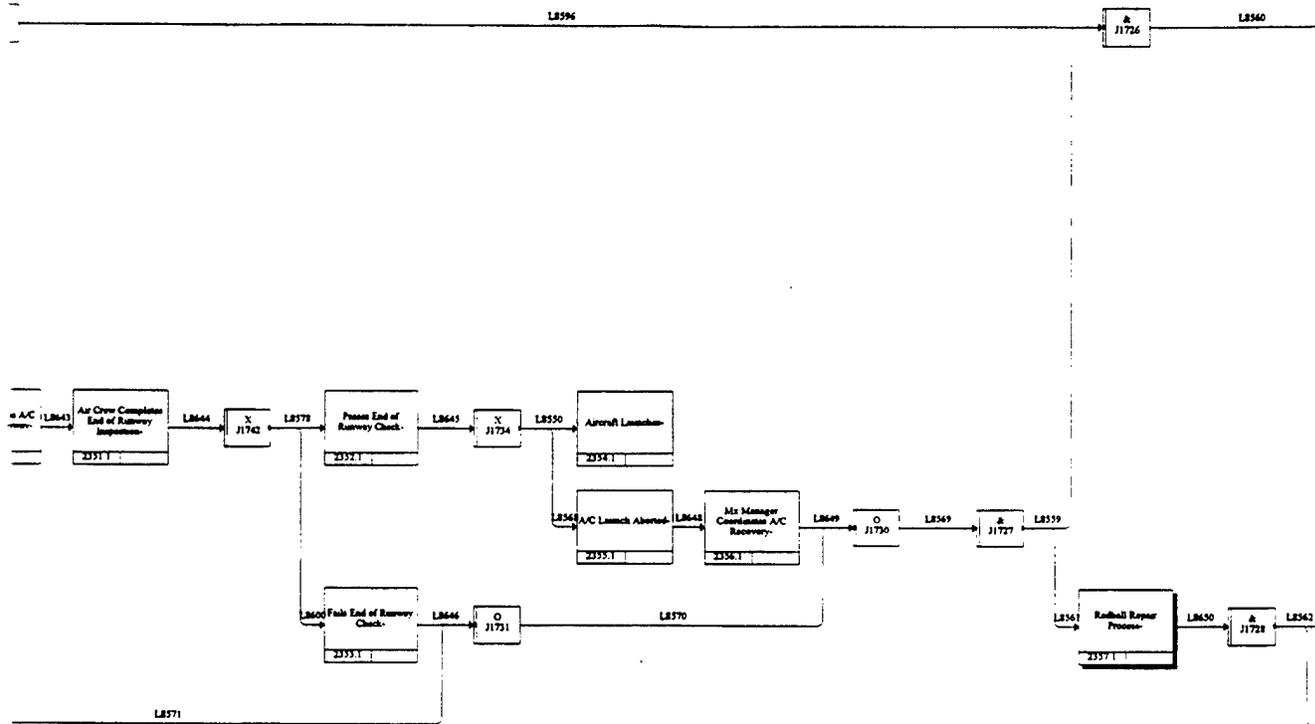


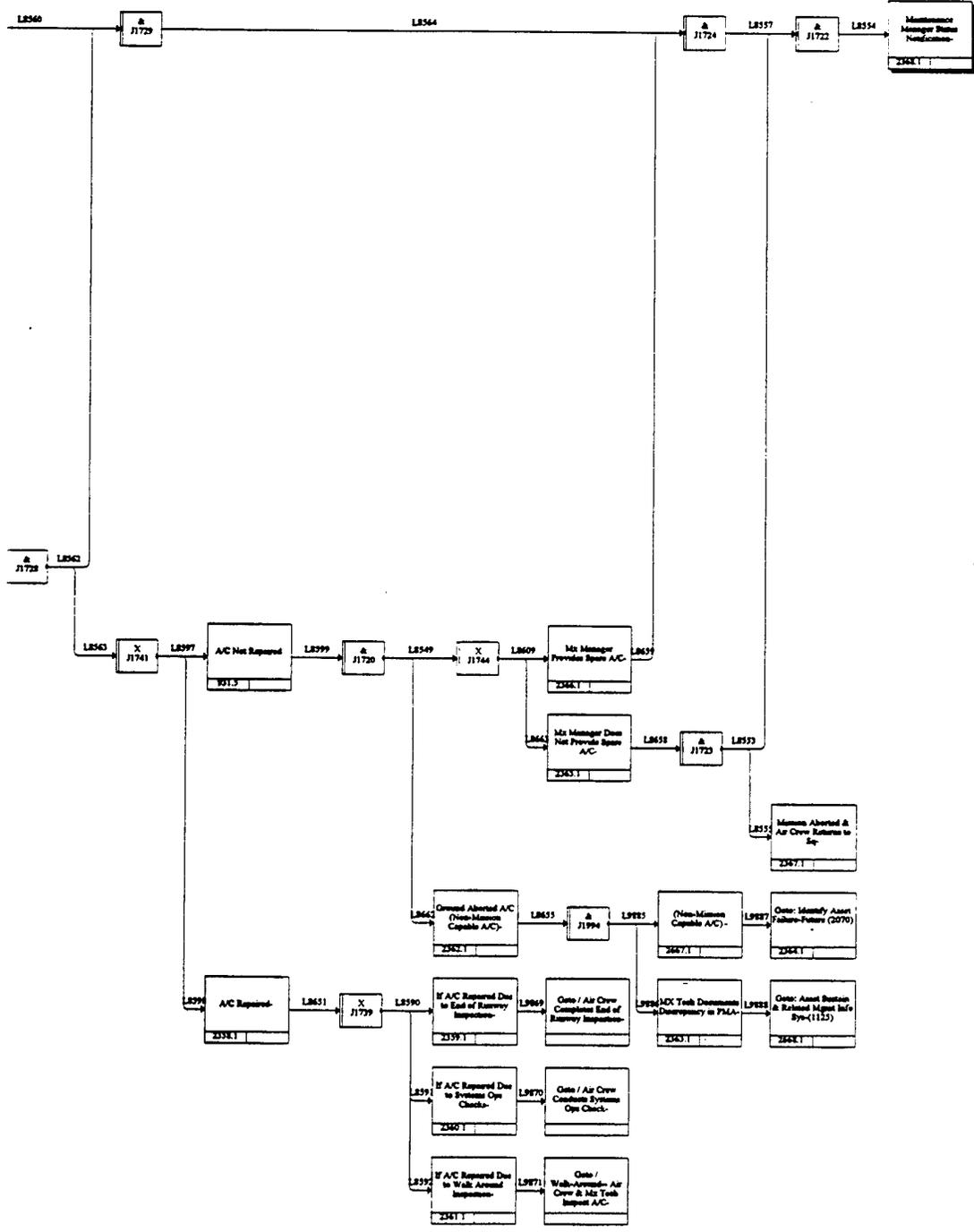
READER

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Date: 10/29/98		Working	READER	DATE
Process Rev: 1	x	Draft		
		Recommended		
Time: 10:18:32		Publication		

Management  
Manager Status  
Notations

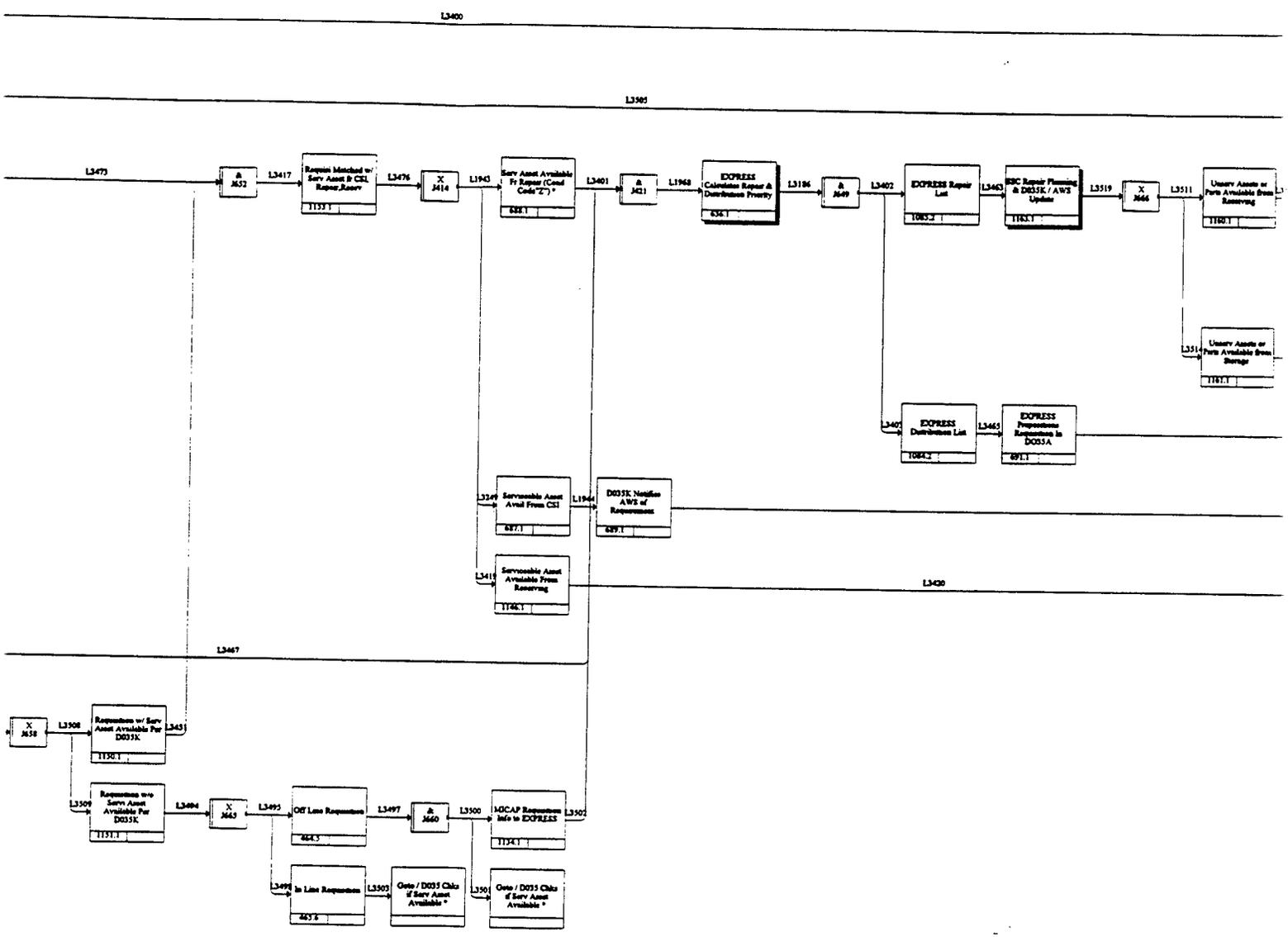
	READER	DATE	Context
			Neither the US Gov't or Intergraph has any responsibility or liability for any consequences of any use, misuse, inability to use, or reliance upon the information contained herein.

**Process Flow Decomp: Wholesale (Depot or Contract) Process- Work Around**

act) Process- Work Around



Date: 10/29/98	Working	READER	DATE
Process Rev: 1	X Draft		
	Recommended		
Time: 10:07:24	Publication		

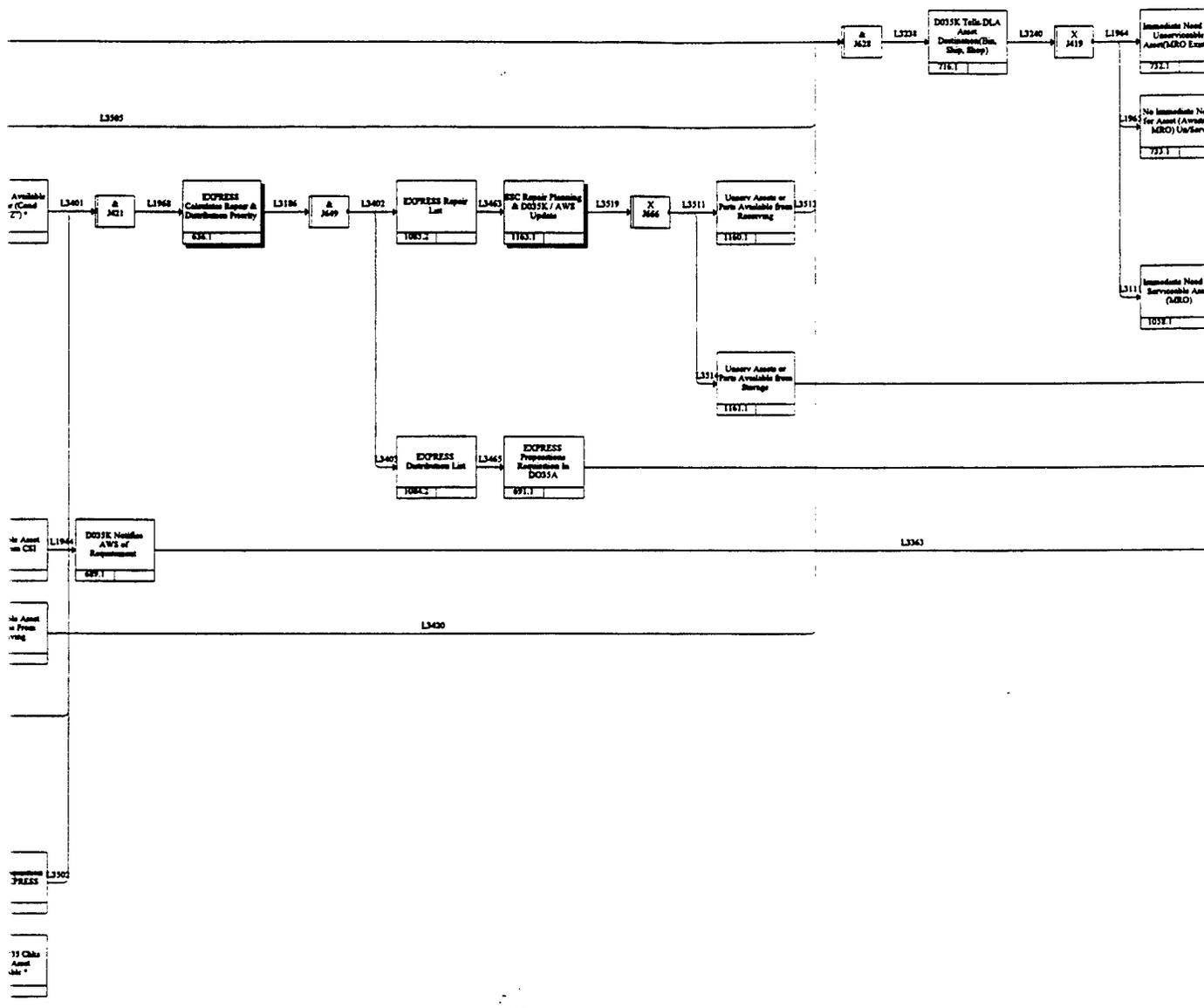


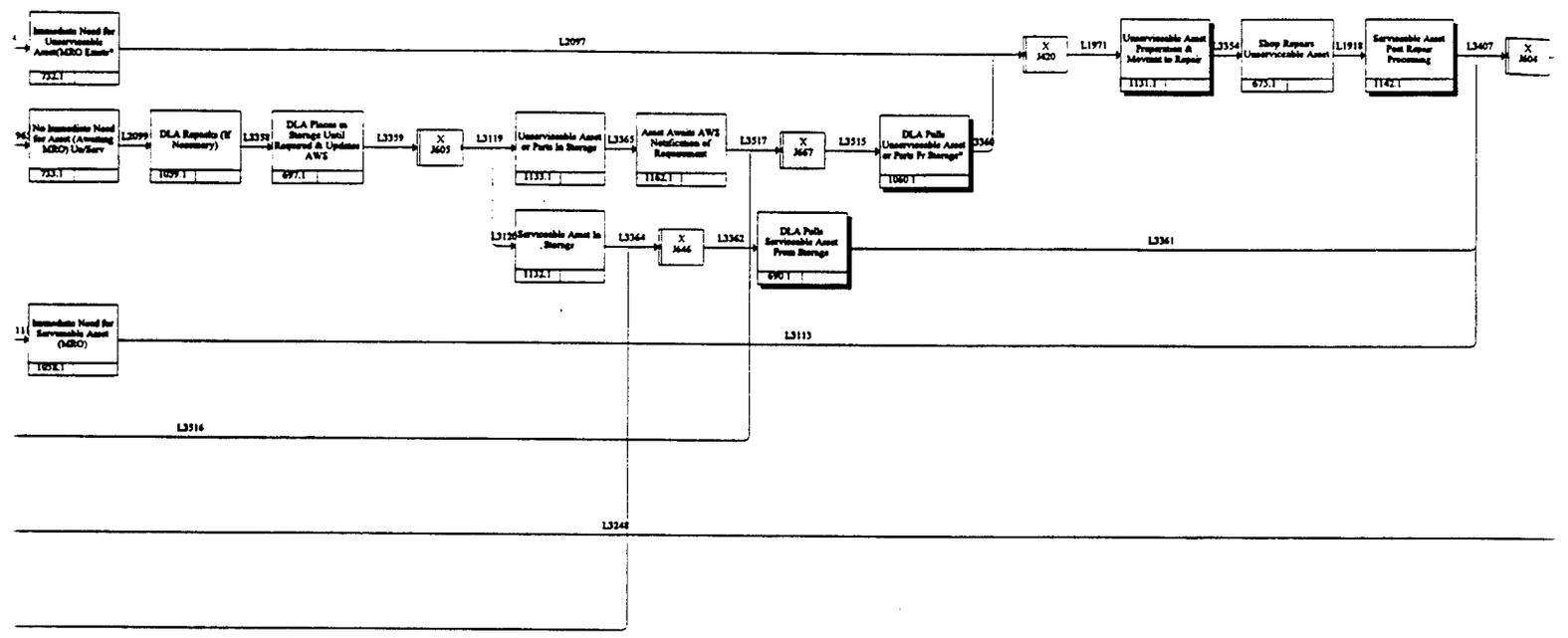
READER

DATE

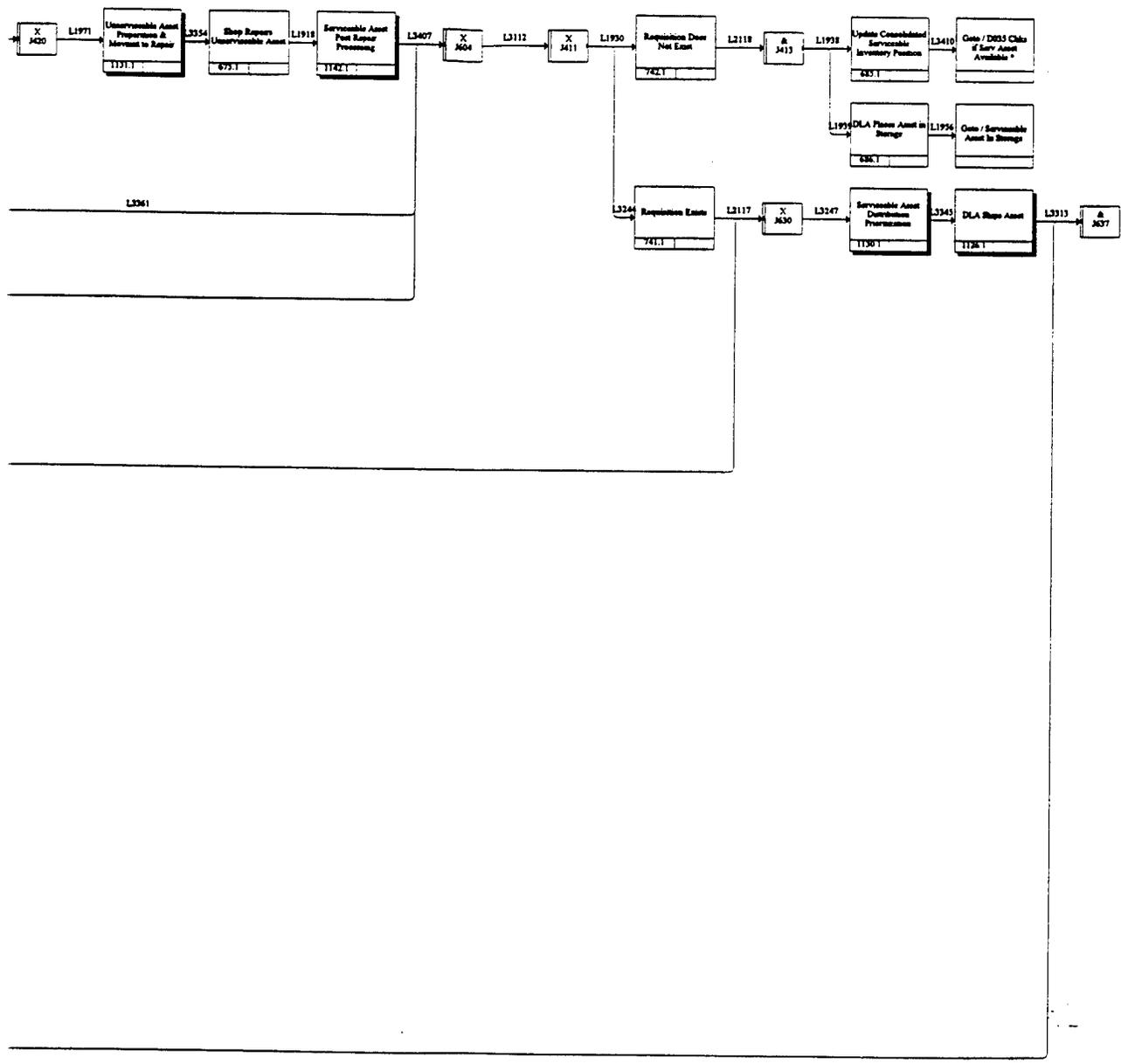
Context

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Date: 10/29/98	Working	READER	DATE	N re of up
Process Rev: 1	X Draft			
	Recommended			
Time: 10:07:24	Publication			



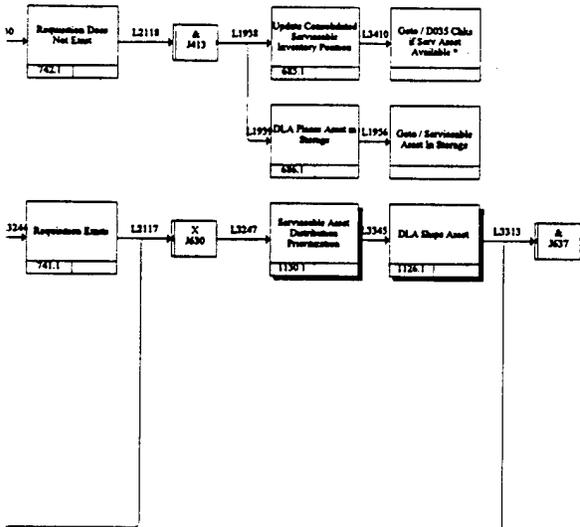
2

READER

DATE

Context

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3

**Process Flow Decomp: Non-Sortie Related Logistics Processes**

Used At: Not Approved for Public Release

Author: AFLMA Reengineering Team  
 Project: Future To Be-Asset Sustainment Pro Rev: 1  
 Notes: 1 2 3 4 5 6 7 8 9 10 Time: 09:59:34

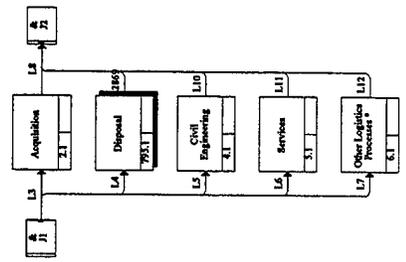
Date: 10/29/98

Working:  Working  
 Draft  
 Recommended  
 Publication

READER

DATE

Context  
 Neither the US Gov't or Intergraph has any responsibility or liability for any consequences of any use, misuse, inability to use, or reliance upon the information contained herein.



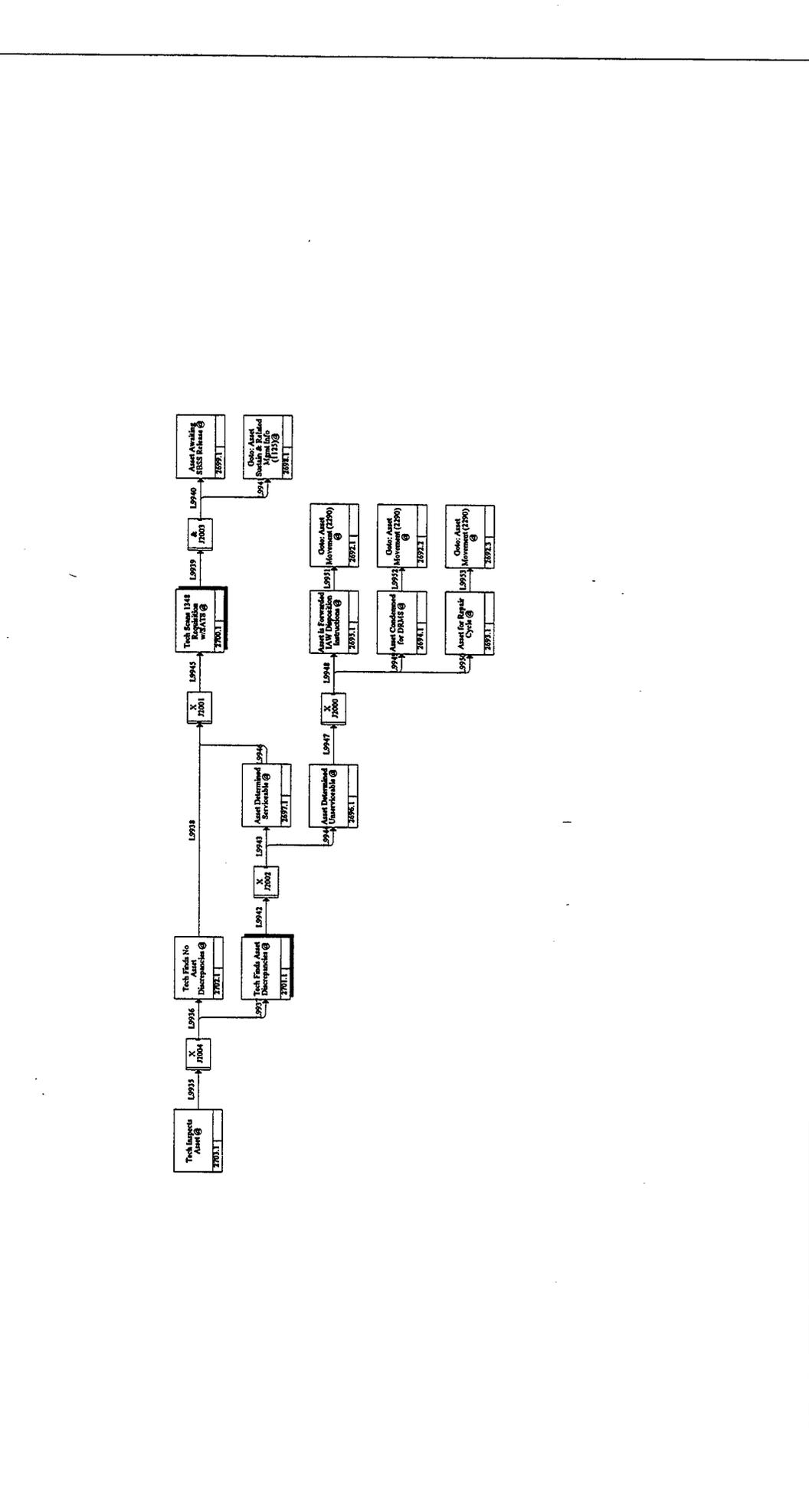
**Project: Future To Be- Asset Sustainment Process; Date: 10/30/98**

**Process Flow Decomp: In-Check Asset @**

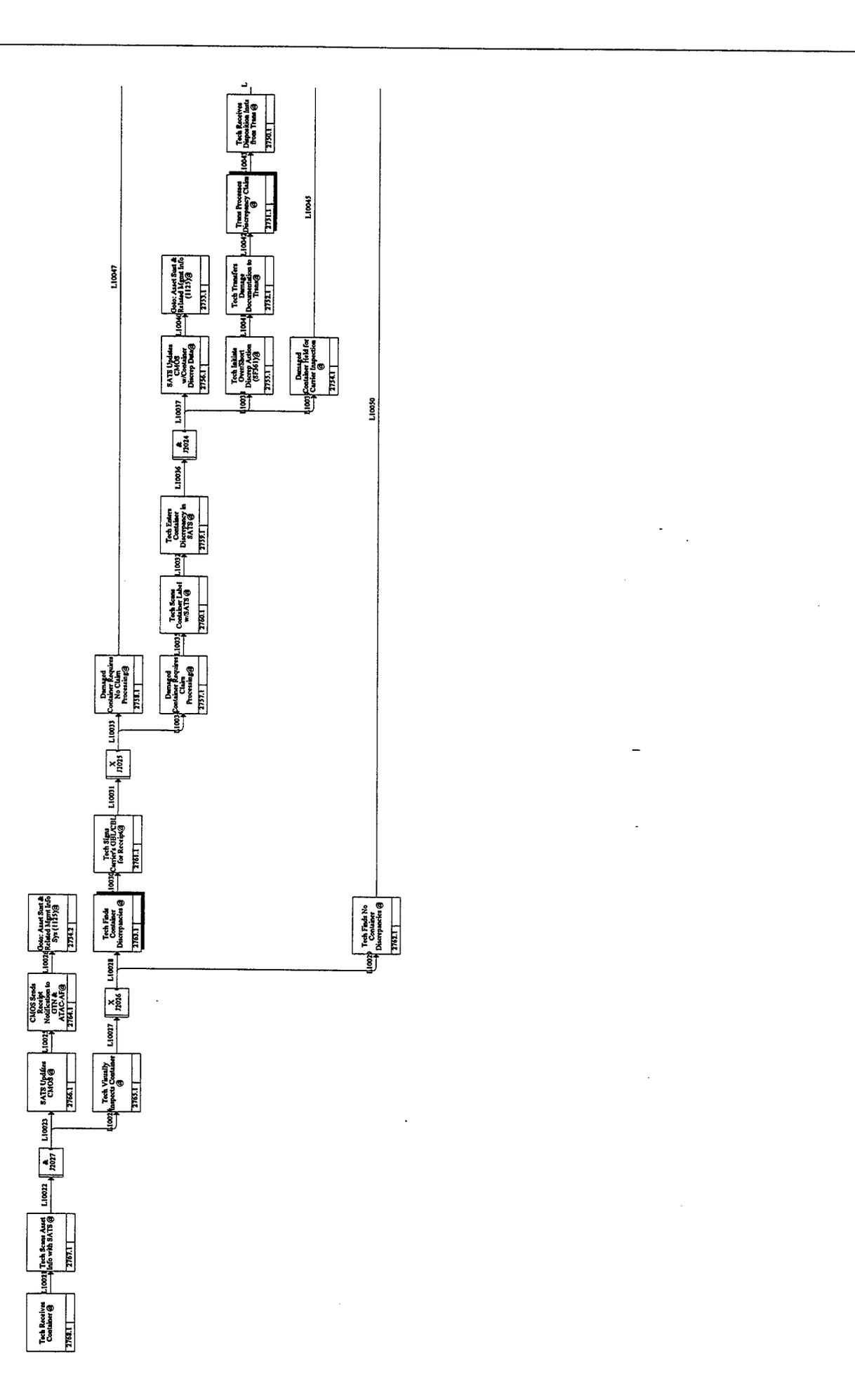
Used At: Not Approved for Public Release

Author: Project: Future To Be- Asset Sustainment Pro Rev: 1  
 Date: 5/13/88  
 Notes: 1 2 3 4 5 6 7 8 9 10 Time: 08:25:06

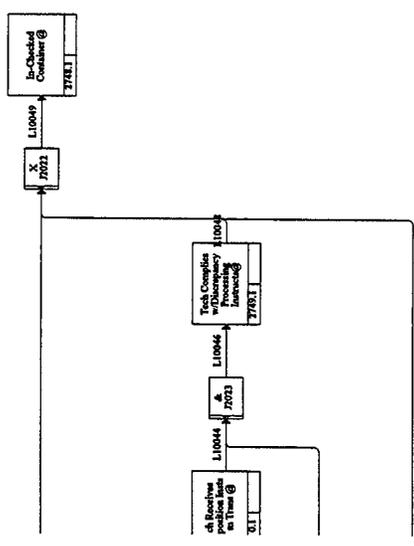
Working	READER	DATE	Context
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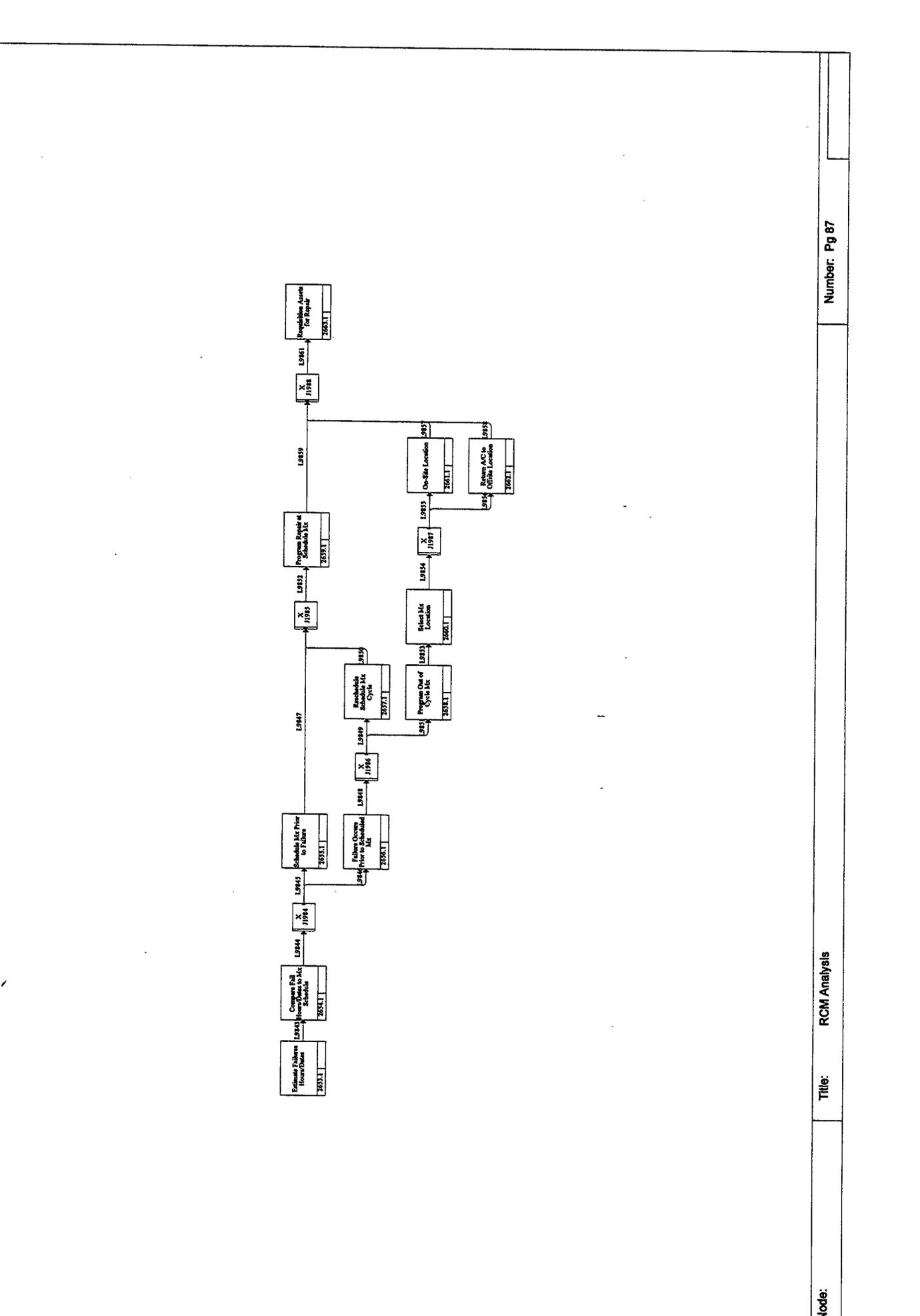
**Process Flow Decomp: In-Check Container @**



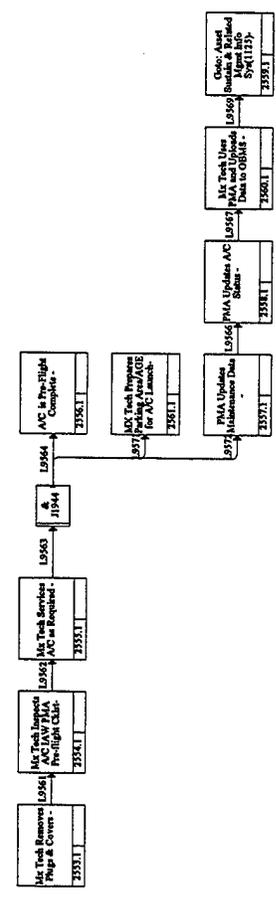
Used At: Not Approved for Public Release	Author: Project: Notes:	Date: 10/29/88 Rev: 1 Time: 10:15:31	Working Draft Recommended Publication	READER	DATE	Context Neither the US Gov't or Intergraph has any responsibility or liability for any consequences of any use, misuse, inability to use, or reliance upon the information contained herein.
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**Process Flow Decomp: RCM Analysis**



**Process Flow Decomp: Mx Tech Performs Pre-Flight Inspection -**



**Process Flow Decomp: Mx Mgr Directs Refuel of A/C -**



**Project: Future To Be- Asset Sustainment Process; Date: 10/30/98**

**Process Flow Decomp: Maintenance Manager Directs Configuration of A/C -**





**Project: Future To Be- Asset Sustainment Process; Date: 10/30/98**

**Process Flow Decomp: Technician Prepares Asset for Shipment\*-**



Used At: Not Approved for Public Release

Author: AFLMA Reengineering Team Date: 10/29/98

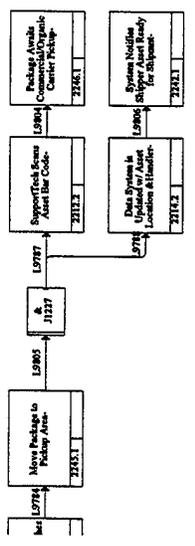
Project: Future To Be- Asset Sustainment Pro Rev: 1

Notes: 1 2 3 4 5 6 7 8 9 10 Time: 10:04:28

Working:  Draft  Recommended  Publication

READER: \_\_\_\_\_ DATE: \_\_\_\_\_

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**Process Flow Decomp: Goes to Wholesale (Depot or Contract) Processing**

Used At:  
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Release

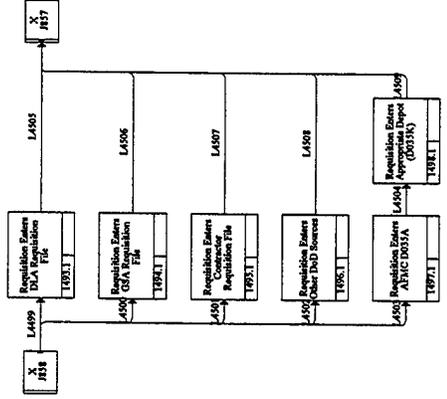
Author: AFLMA Reengineering Team  
Project: Future To Be- Asset Sustainment Pro  
Notes: 1 2 3 4 5 6 7 8 9 10

Date: 10/29/08  
Rev: 1  
Time: 10:02:31

Working  
Draft  
Recommended  
Publication

READER  
DATE

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Node:

Title: Goes to Wholesale (Depot or Contract) Processing

Number: Pg 99

**Process Flow Decomp: Maintenance Manager Status Notification-**

Used At: Not Approved for Public Release

Author: AFLMA Reengineering Team Date: 10/29/98

Project: Future To Be-Asset Sustainment Pro Rev: 1

Notes: 1 2 3 4 5 6 7 8 9 10 Time: 10:19:18

Working

Draft

Recommended

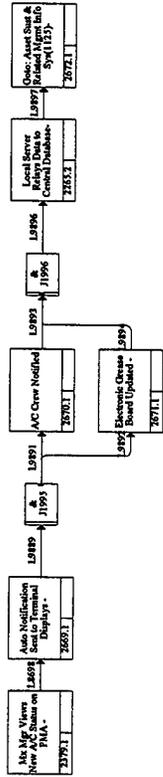
Publication

READER

DATE

Context

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**Process Flow Decomp: Redball Repair Process-**

Used At:  
Not Approved for Public Release

Author: AFLMA Reengineering Team  
Project: Future To Be-Asset Sustainment Pro  
Notes: 1 2 3 4 5 6 7 8 9 10

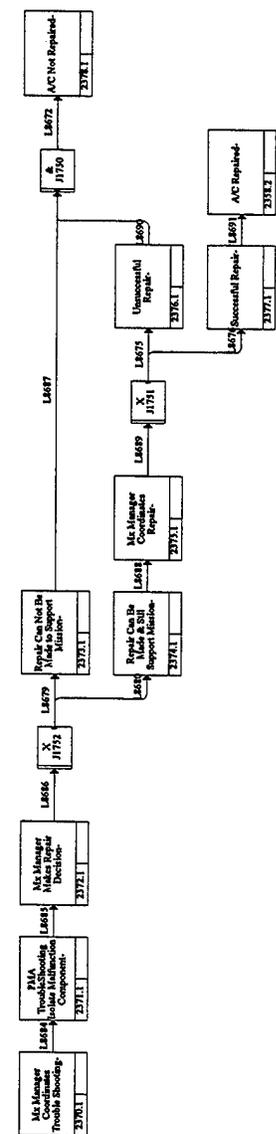
Date: 10/29/98  
Rev: 1  
Time: 10:18:59

Working  
Draft  
Recommended  
Publication

READER

DATE

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**Process Flow Decomp: SSC Repair Planning & D035K / AWS Update**

Used At: Not Approved for Public Release	Author: AFLMA Reengineering Team	Date: 10/29/88	Working	READER	Context
Project: Future To Be-Asset Sustainment Pro	Rev: 1		<input checked="" type="checkbox"/> Draft		Neither the US Gov't or Intergraph has any responsibility or liability for any consequences of any use, misuse, inability to use, or reliance upon the information contained herein.
Notes: 1 2 3 4 5 6 7 8 9 10	Time: 10:10:38		<input type="checkbox"/> Recommended		
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**Process Flow Decomp: IM Reviews Requisitions**

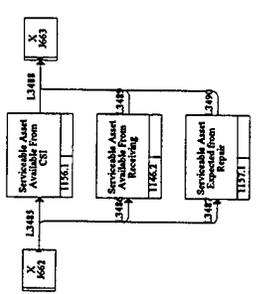


**Process Flow Decomp: Receive Requisition**



**Process Flow Decomp: D035 Chks if Serv Asset Available**

Used At: Not Approved for Public Release	Author: Project: Notes:	AF/LMA Reengineering Team Future To Be- Asset Sustainment Pro 1 2 3 4 5 6 7 8 9 10	Date: Rev: Time:	10/29/98 1 10:09:07	Working Draft Recommended Publication	READER	DATE	Context Neither the US Gov't or Intergraph has any responsibility or liability for any consequences of any use, misuse, inability to use, or reliance upon the information contained herein.
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**Process Flow Decomp: Serviceable Asset Post Repair Processing**

Used At: Not Approved for Public Release

Author: AFLMA Reengineering Team  
 Date: 10/29/88

Project: Future To Be- Asset Sustainment Pro Rev: 1

Notes: 1 2 3 4 5 6 7 8 9 10 Time: 10:12:01

Working  
 Draft  
 Recommended  
 Publication

READER

DATE

Context  
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Shop Delivered Serviceable Asset to SIC  
 799 I

SIC Change Complete to Z-Serviceable  
 1072 I

DLA Prepares Asset For Storage or Shipping  
 1127 I

**Process Flow Decomp: DLA Pulls Unserviceable Asset or Parts Fr Storage**

Used At: Not Approved for Public Release

Author: AFLMA Reengineering Team Date: 10/29/88

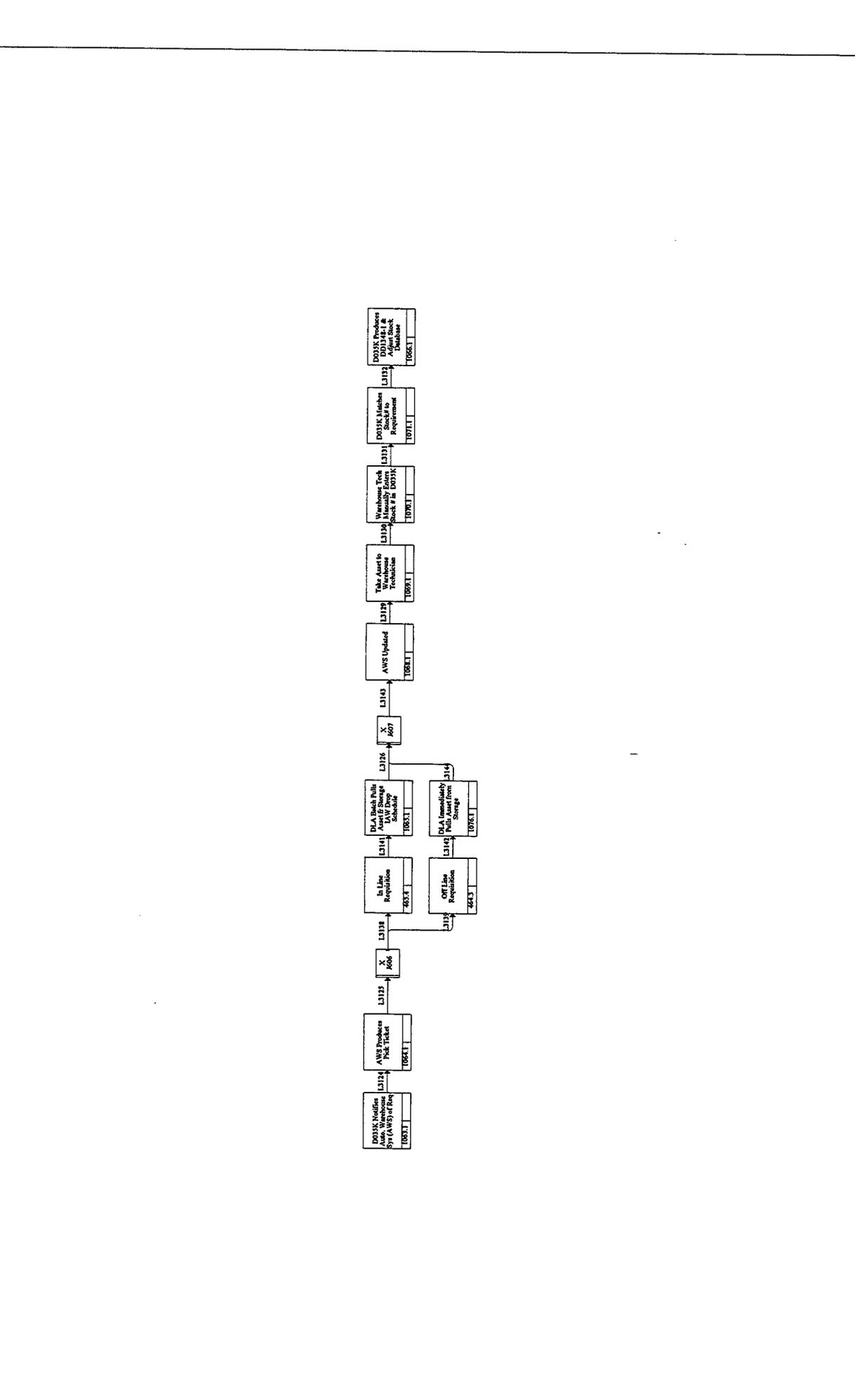
Project: Future To Be- Asset Sustainment Pro Rev: 1

Notes: 1 2 3 4 5 6 7 8 9 10 Time: 10:11:24

Working:  Draft:  Recommended:  Publication:

READER: DATE:

Context: Neither the US Govt or Intergraph has any responsibility or liability for any consequences of any use, misuse, inability to use, or reliance upon the information contained herein.



**Process Flow Decomp: Unserviceable Asset Preparation & Movmnt to Repair**

Used AI: Not Approved for Public Release

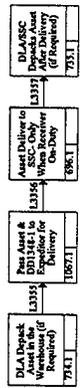
Author: AFLMA Reengineering Team  
 Project: Future To Be- Asset Sustainment Pro Rev: 1  
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Date: 10/29/98

Working	READER	DATE
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Context

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**Process Flow Decomp: Serviceable Asset Distribution Prioritization**

Used At: Not Approved for Public Release

Author: AFLMA Reengineering Team Date: 10/29/88

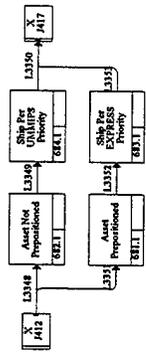
Project: Future To Be-Asset Sustainment Pro Rev: 1

Notes: 1 2 3 4 5 6 7 8 9 10 Time: 10:12:29

Working:  Draft  Recommended  Publication

READER: \_\_\_\_\_ DATE: \_\_\_\_\_

Context: Neither the US Govt or Intergraph has any responsibility or liability for any consequences of any use, misuse, inability to use, or reliance upon the information contained herein.



**Project: Future To Be- Asset Sustainment Process; Date: 10/30/98**

**Process Flow Decomp: DLA Ships Asset**

Used At: Not Approved for Public Release

Author: AFLMA Reengineering Team

Date: 10/29/88

Project: Future To Be- Asset Sustainment Pro Rev. 1

Notes: 1 2 3 4 5 6 7 8 9 10

Time: 10:12:45

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Context

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DLA Over-Packs  
Statement (if  
required)

133146  
111111

DLA Distribution  
Control

133146  
7881

DLA Distribution  
Control

133146  
7881

DLA Office  
Shipping Label

133147  
11221

Node: DLA Ships Asset

Title: DLA Ships Asset

Number: Pg 121

**Process Flow Decomp: Consumable Requisition & Demand Processing**



**Process Flow Decomp: DLA Receiving**





**Process Flow Decomp: DLA Pulls Serviceable Asset From Storage**



**Process Flow Decomp: EXPRESS Calculates Repair & Distribution Priority**

Used At: Not Approved for Public Release

Author: AFLMA Reengineering Team  
 Project: Future To Be-Asset Sustainment Pro  
 Date: 10/29/88  
 Rev: 1

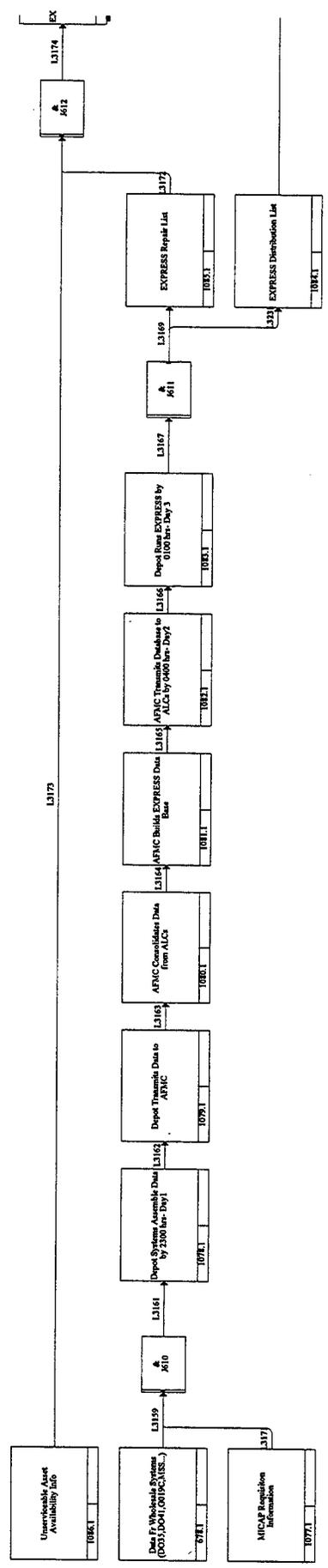
Notes: 1 2 3 4 5 6 7 8 9 10  
 Time: 10:09:50

Working: X  
 Draft  
 Recommended  
 Publication

READER

DATE

Context  
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Author: AFLMA Reengineering Team

Project: Future To Be-Asset Sustainment Pro

Notes: 1 2 3 4 5 6 7 8 9 10

Date: 10/29/98

Rev: 1

Time: 10:09:50

Working:  Draft

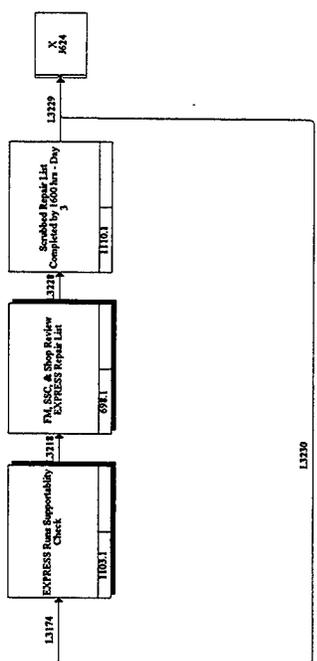
Recommended:

Publication:

READER: \_\_\_\_\_

DATE: \_\_\_\_\_

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**Process Flow Decomp: Disposable**

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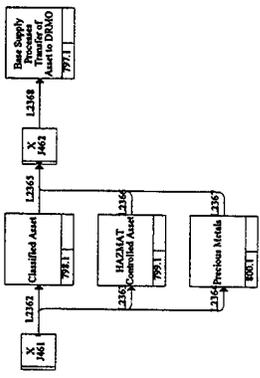
Author: AFLMA Reengineering Team  
 Project: Future To Be-Asset Sustainment Pro Rev: 1  
 Notes: 1 2 3 4 5 6 7 8 9 10 Time: 15:45:07

Date: 11/12/97

Working:  Draft:  Recommended:  Publication:

READER: \_\_\_\_\_ DATE: \_\_\_\_\_

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**Project: Future To Be- Asset Sustainment Process; Date: 10/30/98**

**Process Flow Decomp: Tech Scans 1348 Requisition w/SATS @**

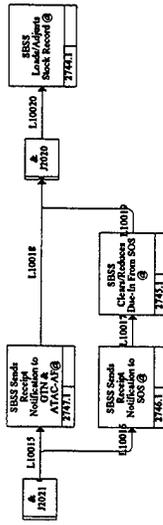
Used At: Not Approved for Public Release

Author: Date: 5/13/98  
 Project: Future To Be- Asset Sustainment Pro Rev: 1  
 Notes: 1 2 3 4 5 6 7 8 9 10 Time: 08:25:10

Working DATE  
 Draft  
 Recommended  
 Publication

READER

Context



Title: Tech Scans 1348 Requisition w/SATS @

Number: Pg 135

Node:

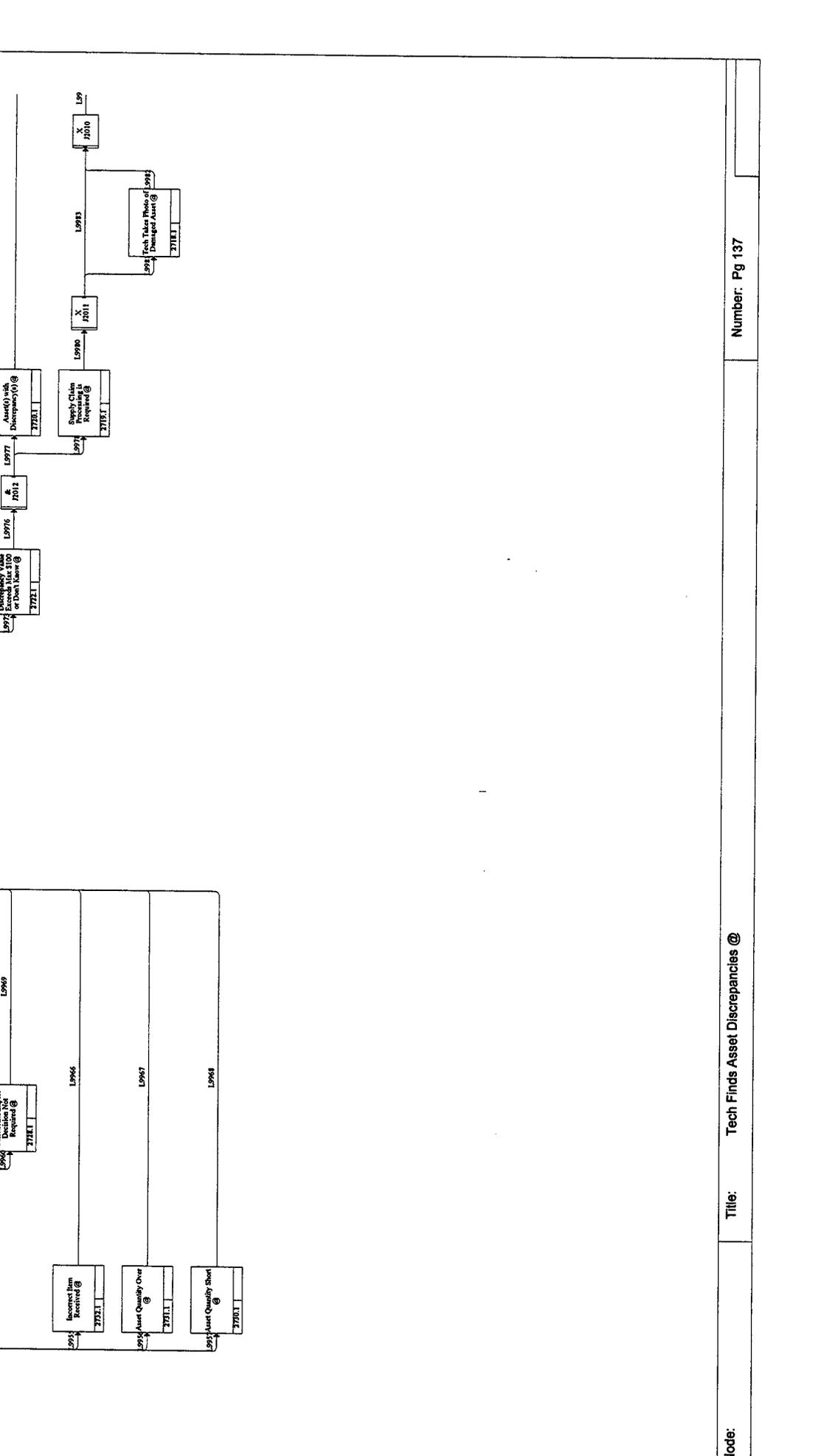
**Process Flow Decomp: Tech Finds Asset Discrepancies @**

Used At: Not Approved for Public Release

Author: Date: 5/13/98  
 Project: Future To Be- Asset Sustainment Pro Rev: 1  
 Notes: 1 2 3 4 5 6 7 8 9 10 Time: 08:25:09

Working: X  
 Draft:  
 Recommended:  
 Publication:

READER DATE Context





Used At: Not Approved for Public Release		Author: Project: Notes:	Date: 5/13/98 Rev: 1	Working Draft Recommended Publication	READER	DATE	Context
<p>92) Asset is Considered Unrecoverable @</p> <p>70801</p>		1 2 3 4 5 6 7 8 9 10	Time: 08:25:09				

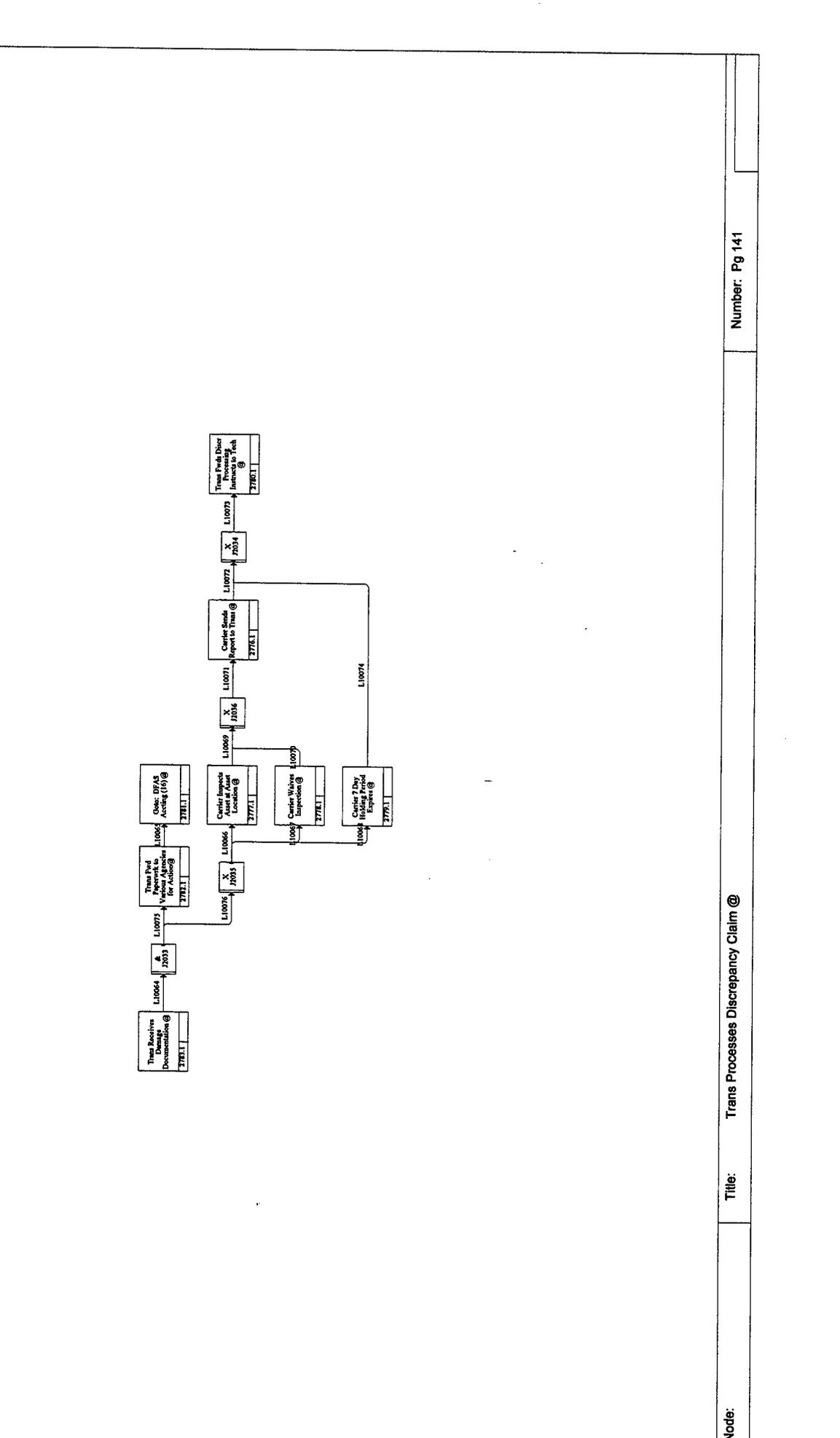
**Process Flow Decomp: Trans Processes Discrepancy Claim @**

Used At: Not Approved for Public Release

Author: Date: 10/29/88  
 Project: Future To Be-Asset Sustainment Pro Rev: 1  
 Notes: 1 2 3 4 5 6 7 8 9 10 Time: 10:15:56

Working: x  
 Draft  
 Recommended  
 Publication

READER: DATE



**Process Flow Decomp: Tech Finds Container Discrepancies @**

Used At: Not Approved for Public Release

Author: Date: 10/29/98

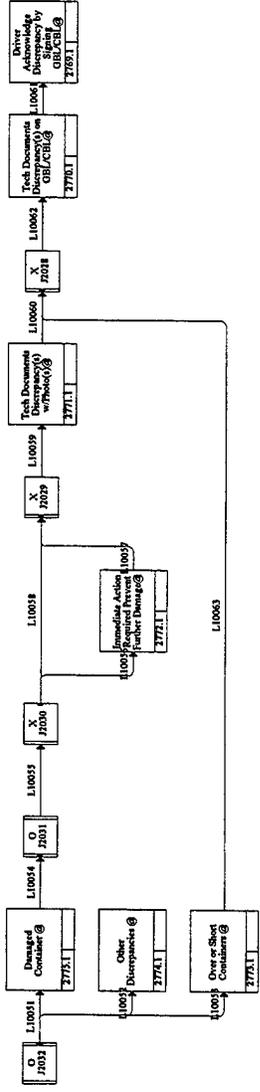
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Working:  Draft:  Recommended:  Publication:

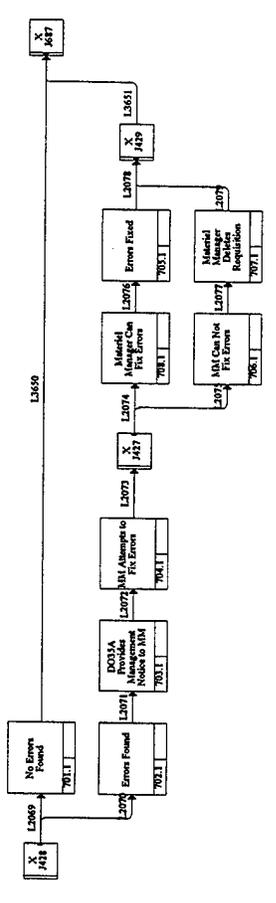
READER: DATE:

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**Process Flow Decomp: D035A Audits Requisition for Data Field Accuracy**

Used At: Not Approved for Public Release	Author: AFLMA Reengineering Team Project: Future To Be-Asset Sustainment Pro Notes: 1 2 3 4 5 6 7 8 9 10	Date: 10/29/98 Rev: 1 Time: 10:08:18	Working Draft Recommended Publication	READER	DATE	Context Neither the US Gov't or Intergraph has any responsibility or liability for any consequences of any use, misuse, inability to use, or reliance upon the information contained herein.
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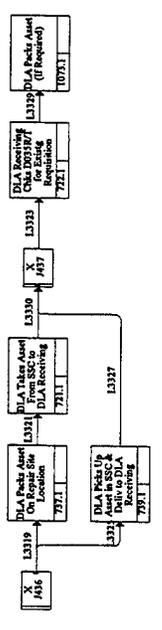
**Process Flow Decomp: DLA Prepares Asset For Storage or Shipping**

Used At: Not Approved for Public Release

Author: AFLMA Reengineering Team  
 Date: 10/29/98  
 Project: Future To Be- Asset Sustainment Pro Rev: 1  
 Notes: 1 2 3 4 5 6 7 8 9 10 Time: 10:12:11

Working	READER	DATE
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**Process Flow Decomp: DLA Determines Carrier**

Used AI:  
Not Approved for Public Release

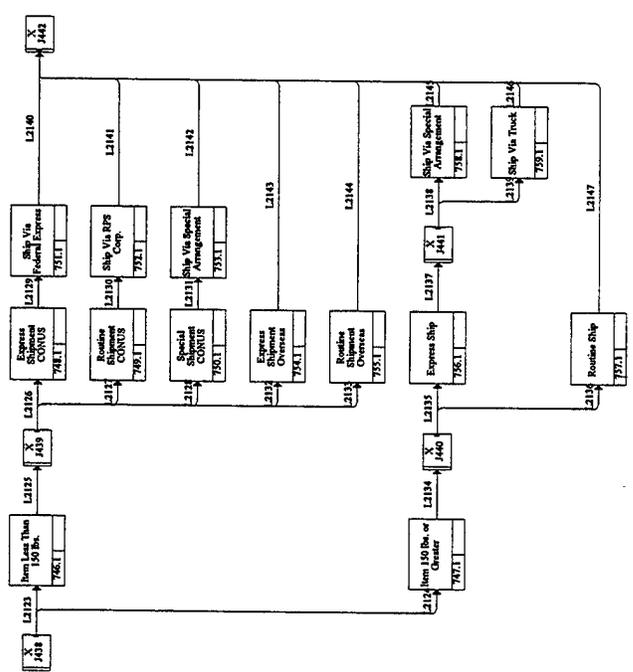
Author: AFLMA Reengineering Team  
 Project: Future To Be- Asset Sustainment Pro  
 Notes: 1 2 3 4 5 6 7 8 9 10

Date: 10/29/98  
 Rev: 1  
 Time: 10:12:57

Working: x  
 Draft:  
 Recommended:  
 Publication:

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Node: \_\_\_\_\_

Title: DLA Determines Carrier

Number: Pg 149

**Process Flow Decomp: DLA Tech Manually Inputs Asset Info into D035K**



**Process Flow Decomp: EXPRESS Runs Supportability Check**



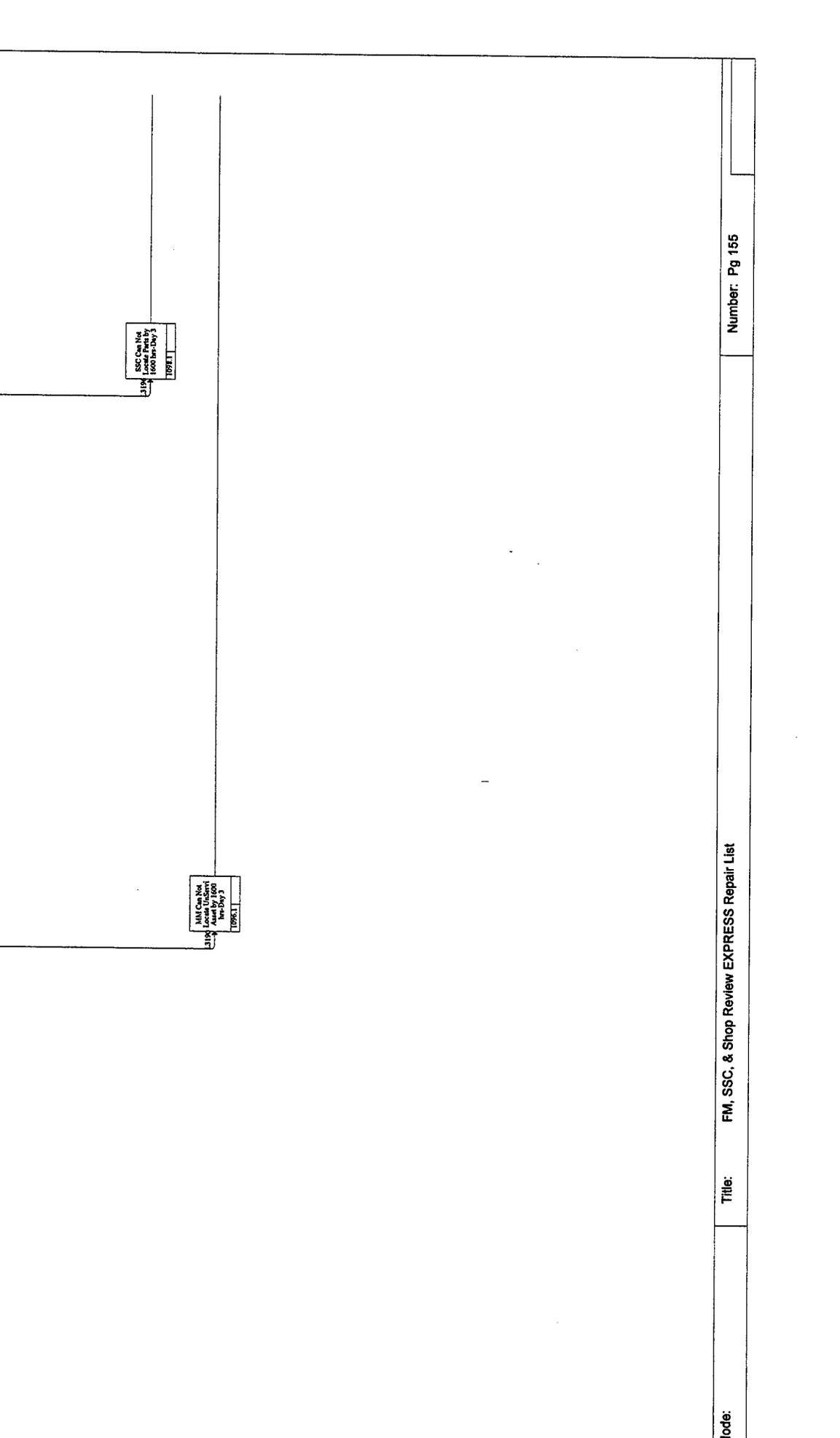
**Process Flow Decomp: FM, SSC, & Shop Review EXPRESS Repair List**

Used At: Not Approved for Public Release

Author: AFLMA Reengineering Team Date: 10/29/98  
 Project: Future To Be- Asset Sustainment Pro Rev: 1  
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Working: X Draft  
 Recommended  
 Publication

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**Process Flow Decomp: Supply Processes Discrepancy Claim @**

Used At:	Author:	Date:	Project:	Rev:	Notes:	Time:	Context
Not Approved for Public Release	Future To Be- Asset Sustainment Pro	5/13/98	1	1	1 2 3 4 5 6 7 8 9 10	08:25:10	
x	Working	READER	DATE	Draft	Recommended	Publication	

**Process Flow Decomp: Tech Scans Asset (w/Discrepancy) with SATS @**



**REPORT DOCUMENTATION PAGE**FORM APPROVED  
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